

Mathematical Reviews

Published monthly by The American Mathematical Society

INDEX FOR VOLUME 39

January 1970 — June 1970

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$$u'(x) = \frac{\lambda}{1+x^2} \frac{P_n(x)}{Q_n(x)} u(x^2)$$

is in general meromorphic with respect to λ , not holomorphic.

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- Simposio di meccanica e matematica applicata.** 6703c: ★Simposio di meccanica e matematica applicata.
- Singularities of differentiable maps.** 2172: ★Singularities of differentiable maps.
- Source book in mathematics, 1200–1800.** 11: ★A source book in mathematics, 1200–1800.
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- Statistics.** 2237: ★Selected statistical papers. 1, 2.
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- Studies in certain problems of the constructive theory of functions.** 1853: ★Studies in certain problems of the constructive theory of functions.
- Studies in constructive mathematics and mathematical logic.** 2593: ★Studies in constructive mathematics and mathematical logic. Part I.
- Studies in number theory.** 1368: ★Studies in number theory.
- Summer School in Otaniemi.** 3021: ★Topics in several complex variables.
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- Tables for the computation of Mathieu functions. Characteristic values, coefficients and joining factors.** 5037: ★Tables for the computation of Mathieu functions. Characteristic values, coefficients and joining factors.
- Tables of generalized sine- and cosine-integral functions.** 5038: ★Tables of generalized sine- and cosine-integral functions: Vol. II.
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- Topics in several complex variables.** 3021: ★Topics in several complex variables.

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Bibliography 1954-1961.

SUBJECT CLASSIFICATION

This is a list of headings, with code numbers, under which articles were classified during the first half of 1970. The headings in capital letters are identical with those appearing in the monthly issues.

00. GENERAL

- 00 General mathematics
- 04 Collections of papers: Proceedings of conferences of general interest, translation volumes, etc. (See also 01.60)
- 20 General bibliographies
- 30 Dictionaries and other general reference works
- 50 Methodology and philosophy of mathematics

01. HISTORY AND BIOGRAPHY

- 01 General histories, source books
- 02 Primitive
- 05 Pre-Greek, Babylonian, Egyptian
- 08 Greek
- 10 Far East
- 12 Islam
- 15 Medieval
- 18 15th and 16th centuries, Renaissance
- 20 17th century
- 25 18th century
- 30 19th century
- 35 20th century
- 40 Contemporary
- 50 Biographies, obituaries, personalia
- 60 Collected or selected works; reprints or translations of classics

02. LOGIC AND FOUNDATIONS

- 10 Classical deductive systems, general
- 12 Propositional calculus, two-valued
- 16 Predicate calculus
- 18 Classical proof theory
- 20 Non-classical logic, general
- 23 Intuitionism
- 25 Many-valued logic
- 27 Modal logic
- 30 Formal syntax and linguistics, general
- 32 Higher-order languages
- 35 Infinitary languages
- 38 Languages with additional quantifiers
- 40 Algebraic logic, general
- 42 Boolean algebras, lattices, topologies
- 45 Algebra of relations
- 48 Cylindric and polyadic algebras
- 50 Model theory, general
- 52 Semantics and metamathematics, categoricity
- 54 Axiomatics and applications, decision methods
- 57 Non-standard models
- 60 Axiomatic set theory, general
- 63 Formalization of set theory
- 65 Consistency, independence, existence
- 68 Measurability, accessibility, other special questions
- 70 Recursive function theory, general
- 72 Arithmetic and recursive analysis
- 74 Undecidability
- 75 Unsolvability in mathematical systems
- 77 Hierarchies
- 80 Algorithms and machines, general
- 82 Turing, Post, Thue schemes
- 85 Combinatory logic
- 88 Abstract automaton theory (See also 94.40)

04. SET THEORY

- 15 Point sets
- 20 Relations (See also 08.20)

30 Transfinite numbers

- 40 Descriptive set theory; Borel classifications, Suslin schemes, etc. (See also 28.10)
- 60 Combinatorial (See also 05.04)

05. COMBINATORIAL THEORY, GRAPH THEORY

- 04 Combinatorial choice problems; subsets, representatives
- 05 Factorials, binomial coefficients, combinatorial functions
- 10 Combinatorial enumeration problems, generating functions
- 15 Combinatorial inequalities
- 20 Block designs (See also 62.61)
- 22 Difference sets (number-theoretic, group-theoretic, etc.)
- 24 Orthogonal arrays, Latin squares
- 25 Matrices
- 27 Finite geometries (See also 50.60)
- 30 Other designs, configurations
- 35 Matroids, geometric lattices
- 40 Graphs, general theory
- 45 Trees
- 50 Topological graph theory, embedding (See also 55.10)
- 55 Chromatic theory of graphs and maps
- 60 Directed graphs (digraphs)
- 62 Graphs and groups
- 65 Enumeration of graphs and maps

06. ORDER, LATTICES, ORDERED ALGEBRAIC STRUCTURES

- 10 Total order
- 20 Partial order
- 30 Lattices, generalizations
- 35 Complemented lattices, generalizations
- 40 Modular lattices, continuous geometries, generalizations
- 50 Distributive lattices, generalizations
- 60 Boolean algebras and rings
- 65 Order topologies (See also 54.56)
- 70 Ordered semigroups, other generalizations of groups
- 75 Ordered groups
- 78 Ordered abelian groups
- 80 Ordered linear spaces (See also 46.06)
- 85 Ordered rings, algebras, modules (See 12.70 for ordered fields)
- 90 Other ordered algebraic structures

08. GENERAL MATHEMATICAL SYSTEMS

- 10 Concrete categories, structures (See also 18.10)
- 20 Laws of composition
- 30 Universal algebra, general algebraic structures
- 40 Other

10. THEORY OF NUMBERS

- 01 General books
- 02 Tables
- 03 Computations
- 05 Elementary number theory, general
- 06 Congruences, residues
- 07 Special functions and sequences
- 08 Elementary prime number theory
- 09 Expansions and algorithms
- 10 Diophantine equations, general
- 11 Linear and quadratic equations
- 12 Cubic and quartic equations
- 13 Equations of higher degree
- 14 Local (p -adic) theory
- 15 Forms, general
- 16 Quadratic, Hermitian forms
- 17 Forms of degree ≥ 3
- 18 Multilinear forms

SUBJECT CLASSIFICATION

- 20 Modular functions and forms, automorphic functions (See also 20.65, 30.49, 32.65)
 - 21 Modular group, modular functions
 - 22 Automorphic forms, one variable
 - 23 Several variables
 - 25 Geometry of numbers
 - 30 Diophantine approximation
 - 31 Linear approximation, continued fractions
 - 32 Algebraicity, irrationality and transcendence
 - 33 Distribution modulo 1, normal numbers
 - 34 Analytic and p -adic theory
 - 40 Analytic multiplicative theory, general
 - 41 Analytic tools (Zeta- and L -functions, exponential sums, etc.)
 - 42 Distribution of the integers with specified multiplicative structure (including primes)
 - 43 Number-theoretic functions
 - 45 Analytic additive theory, general
 - 46 Sums of powers, generalizations
 - 47 Additive questions concerning primes
 - 48 Partitions, generating functions
 - 49 Sequences
 - 50 Probabilistic number theory
 - 55 Combinatorial problems in number theory (See also 05.00)
 - 60 Sequences of integers, general
 - 61 Recursive and other special sequences
 - 62 Addition of sequences, basis, essential components, etc.
 - 63 Density of special sequences
 - 64 Sieves
 - 65 Algebraic number theory, general (See also 12.50)
 - 66 Individual algebraic number fields (quadratic, cubic, cyclotomic, Kummer, etc.)
 - 67 Local theory (valuations, finite extensions of p -adic fields)
 - 68 Class field theory, complex multiplication
 - 69 Arithmetic of general rings
 - 75 Arithmetic theory of algebraic objects
 - 76 Polynomials
 - 77 Finite fields, power series fields
 - 78 Valued fields, algebraic function fields
 - 79 Matrices
 - 80 Decidability, other logical questions
12. FIELDS AND POLYNOMIALS
 - 10 Division rings (See also 16.46)
 - 20 Finite fields (See also 10.77)
 - 25 Polynomials over finite fields
 - 30 Polynomials
 - 40 Galois theory (See also 12.80, 13.70, 16.70)
 - 45 Algebraic extension fields
 - 50 Algebraic number fields (See also 10.65)
 - 70 Valuations, topological fields, ordered fields (See also 10.78, 13.98)
 - 75 Transcendental extension fields
 - 78 Algebraic function fields (See also 10.78, 14.35)
 - 80 Differential and difference algebra; differential Galois theory
13. COMMUTATIVE ASSOCIATIVE RINGS AND ALGEBRAS
(See also 16.00)
 - 10 General theory
 - 15 Integral domains, unique factorization domains
 - 20 Ideal theory
 - 25 Chain conditions; Artinian rings, Noetherian rings
 - 30 Radical theory
 - 40 Modules, representation
 - 50 Structure, classification
 - 60 Automorphisms, derivations
 - 70 Galois theory
 - 80 Extension theory
 - 90 Homological methods
 - 93 Rings of polynomials, formal power series
 - 95 Local rings
 - 98 Valuations (See also 12.70)
14. ALGEBRAIC GEOMETRY
 - 01 Algebraic varieties in real and complex spaces, classical algebraic geometry
 - 05 Algebraic geometry over abstract fields and rings, general
 - 08 Foundational questions
 - 10 Theories of equivalence
 - 15 Transformations and correspondences
 - 18 Singularities
 - 20 Algebraic curves, surfaces and special varieties
 - 35 Algebraic function fields (See also 10.78, 12.78)
 - 40 Arithmetic properties of varieties
 - 45 Rationality questions
 - 47 Weil conjectures, Riemann hypotheses
 - 48 Zeta functions for varieties (including mod p questions)
 - 49 Geometric analogues of arithmetic questions
 - 50 Group varieties (algebraic groups), abstract analytic groups
 - 51 Abelian varieties
 - 52 Abstract derivations and differentials
 - 55 Sheaf-theoretic and homological methods
15. LINEAR AND MULTILINEAR ALGEBRA, MATRIX THEORY
 - 05 Vector spaces, linear dependence, rank
 - 10 Linear equations
 - 15 Matrix inversion, generalized inverses
 - 20 Determinants, permanents, other special matrix functions
 - 25 Eigenvalues and eigenvectors
 - 30 Canonical forms, reductions, classification
 - 35 Matrix equations and identities
 - 38 Commutativity
 - 40 Algebraic systems of matrices (See also 16.48, 20.75)
 - 45 Matrices over special rings (quaternions, finite fields, etc.)
 - 48 Matrices of integers (See also 10.79)
 - 50 Linear inequalities
 - 55 Inequalities involving eigenvalues and eigenvectors
 - 58 Miscellaneous inequalities involving matrices
 - 60 Positive matrices
 - 65 Stochastic matrices
 - 70 Quadratic and bilinear forms, inner products
 - 75 Clifford algebras
 - 80 Multilinear algebra, tensor products
 - 85 Vector and tensor algebra, theory of invariants
 - 90 Exterior algebra, Grassman algebras
16. ASSOCIATIVE RINGS AND ALGEBRAS (See also 13.00)
 - 10 General theory
 - 15 Integral domains, unique factorization domains (non-commutative)
 - 20 Ideal theory
 - 25 Chain conditions; Artinian rings, Noetherian rings
 - 30 Radical theory
 - 32 Nil, nilpotent, radical rings
 - 40 Modules, representation
 - 42 Primitive rings
 - 44 Semisimple rings
 - 46 Simple rings, division rings
 - 48 Matrix rings
 - 49 Rings with polynomial identity
 - 50 Structure, classification
 - 53 Prime rings
 - 55 Rings with annihilator conditions
 - 56 Regular rings
 - 58 Rings with involution
 - 60 Automorphisms, derivations
 - 70 Galois theory
 - 80 Extension theory
 - 90 Homological methods
 - 94 Finite rings
 - 96 Semirings, other generalizations of rings (See also 08.00)
 - 98 Topological rings

17. NONASSOCIATIVE RINGS AND ALGEBRAS

- 10 General
- 20 Power associative
- 30 Lie (See also 22.80)
- 40 Jordan
- 50 Alternative
- 60 Other

18. CATEGORY THEORY, HOMOLOGICAL ALGEBRA

- 10 Abstract categories and functors (See also 08.10)
- 15 Abelian categories
- 20 Homological algebra

20. GROUP THEORY AND GENERALIZATIONS

- 08 Varieties of groups
- 10 Group presentations; free groups, generators, relations
- 15 Periodic groups
- 18 Groups with local properties
- 20 Groups acting on sets, permutation groups
- 22 Automorphism groups
- 25 Finite group theory
- 27 Structure of groups, classification
- 29 Simple groups
- 30 Abelian groups
- 40 Nilpotent, solvable, p -groups
- 43 Sylow subgroups, Π -subgroups
- 48 Group extensions
- 50 Homological methods in group theory
- 51 Limits of systems of groups
- 52 General products of groups (including semi-direct, wreath, free, amalgamated)
- 54 Special subgroups
- 56 Series of subgroups
- 58 Lattices of subgroups
- 60 Crystallographic and discrete geometric groups
- 65 Modular groups, discrete subgroups of classical groups
- 70 Classical groups (See also 22.55)
- 72 Collineation groups
- 75 Linear groups, general (See also 14.50)
- 80 Representations, characters, group algebras
- 85 Representations of symmetric groups
- 90 Semigroup algebras, representations, characters
- 92 Semigroups, general theory (See also 06.70)
- 93 Semigroups, structure and classification
- 95 Other binary systems; groupoids, quasigroups, loops
- 97 Ternary systems; heaps, semiheaps, heapoids
- 98 n -ary systems (See also 08.00)

22. TOPOLOGICAL GROUPS AND LIE THEORY

- 05 Topological semigroups and other generalizations of groups
- 10 Topological groups
- 20 Locally compact groups (See also 28.75 for Haar measure, 42.50 for LCA groups)
- 40 Transformation groups (See also 54.80, 54.82, 57.47)
- 50 Lie groups
- 55 Classical groups (See also 14.50, 20.70)
- 57 Representations and analysis of classical groups (See also 81.22)
- 60 Representations and analysis, general
- 65 Harmonic analysis on non-abelian groups (See 42.50 for LCA groups)
- 70 Homogeneous spaces, symmetric spaces (See also 53.66, 53.73, 57.45)
- 80 Lie algebras of Lie groups (See also 17.30)
- 90 Other Lie theory

26. FUNCTIONS OF REAL VARIABLES

- 10 Foundations: limits and generalizations, elementary topology of the line

20. Calculus

- 21 Elementary functions
- 30 Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.)
- 35 Classification of real functions; Baire classification of sets and functions (See also 28.00)
- 40 Differentiation, general theory; mean-value theorems (See also 28.16)
- 41 Non-differentiability (non-differentiable functions, points of non-differentiability), discontinuous derivatives
- 43 Generalized derivatives, derivatives of fractional order
- 44 Antidifferentiation
- 45 Denjoy integral, other special integrals
- 46 Integrals of Riemann, Stieltjes and Lebesgue type (See also 28.00)
- 49 Functions of bounded variation, generalizations
- 50 Monotonic functions, generalizations
- 52 Convexity, generalizations
- 54 Fixed-point theorems
- 55 Several variables, implicit function theorems, Jacobians, transformations with several variables
- 56 Length, area, volume
- 60 Polynomials
- 70 Inequalities (of a general and miscellaneous character)
- 80 Real-analytic functions, C^∞ functions

28. MEASURE AND INTEGRATION

- 10 Classes of sets (Borel fields, σ -rings, etc.), measurable sets, Suslin sets, analytic sets (See also 04.40)
- 13 Real- or complex-valued set functions, contents, measures, outer measures, capacities, etc.
- 16 Abstract differentiation theory, differentiation of set functions (See also 26.40)
- 20 Measurable and non-measurable functions; modes of convergence
- 25 Integration with respect to measures and other set functions
- 30 Integration theory via linear functionals (Radon measures, Daniell integrals, etc.)
- 40 Measures and integrals in product spaces
- 46 Measures and integrals in function spaces, linear spaces; Wiener measure
- 50 Vector-valued measures and integrals, integration of vector-valued functions
- 55 Integration and disintegration of measures, lifting theory
- 60 Measures and integrals with values in general ordered systems
- 65 Measures on Boolean rings, measure algebras
- 70 Measure-preserving transformations, flows (dynamical systems), ergodic theory
- 75 Invariant measures, Haar measure (See also 22.20)
- 80 Length, area, volume; other geometric measure theory

30. FUNCTIONS OF A COMPLEX VARIABLE

- 01 General questions, foundations
- 02 Monogenic properties of complex functions (also polygenic and areolar monogenic functions)
- 09 Inequalities in the complex domain
- 10 Polynomials
- 11 Zeros of polynomials
- 20 Power series
- 21 Behavior on the boundary of convergence. Overconvergence
- 24 Dirichlet series
- 25 Continued fractions
- 28 Analytic continuation
- 30 Sequences and series of analytic functions; uniform convergence, normal families, normal functions
- 35 Integration; integral representations; Cauchy integral, Poisson and Poisson-Stieltjes integrals
- 36 Moment problems; interpolation problems
- 40 Conformal mapping, general theory
- 41 Capacity, harmonic measure
- 42 Univalent functions

SUBJECT CLASSIFICATION

- 43 Coefficient problems
- 44 Multivalent functions
- 45 Riemann surfaces, uniformization
- 46 Algebraic functions, Abelian integrals
- 47 Quasiconformal mapping
- 49 Automorphic functions and modular functions
- 50 Maximum principle. Schwarz's lemma, Phragmén-Lindelöf theorems
- 52 Extremal problems in the complex domain
- 55 Entire functions, general theory
- 56 Entire functions, representation by Dirichlet series
- 57 Entire functions, growth estimates
- 58 Entire functions, distribution of values
- 60 Meromorphic functions, general theory
- 61 Distribution of values, Picard-type theorems, Nevanlinna theory, defect (deficiency) theory
- 62 Theory of cluster sets, prime ends, boundary behavior
- 65 Bounded functions, positive real part, Blaschke products
- 66 Bounded mean modulus, bounded characteristic
- 67 H_p classes and other restrictions
- 70 Approximation by polynomials and rational functions in the complex domain
- 75 Boundary value problems, Dirichlet problem
- 77 Special boundary value problems; Riemann-Hilbert problem. Inverse boundary problems
- 79 Algebroidal functions
- 80 Topological function theory, functions topologically equivalent to analytic mappings
- 81 Generalized analytic mappings. Pseudo-analytic functions of Bers, Vekua, etc.
- 83 Functions of hypercomplex variables and generalized variables (See also 32.80)
- 85 Spaces of analytic functions (See also 46.30)
- 86 Kernel function and applications
- 87 Algebras of analytic functions (See also 46.55)
- 31. POTENTIAL THEORY
 - 10 Harmonic functions in the plane
 - 11 Harmonic functions, general
 - 15 Subharmonic, superharmonic functions
 - 20 Boundary value problems, Dirichlet problem
 - 21 Capacity and harmonic measure
 - 22 Generalized capacity and potential
 - 30 Biharmonic and polyharmonic functions and equations
 - 35 Poisson's equation
 - 50 Axiomatic potential theory
- 32. SEVERAL COMPLEX VARIABLES
 - 02 Foundations, general questions
 - 05 Polynomials, entire functions
 - 10 Power series, formal theory
 - 15 Integral representations
 - 17 Inequalities
 - 20 Domains of holomorphy
 - 22 Pseudoconvexity
 - 25 Local properties of holomorphic functions
 - 27 Removable singularities
 - 32 Complex symmetric spaces
 - 35 Bergman kernel function
 - 40 Analytic manifolds
 - 44 Analytic varieties
 - 47 Analytic spaces
 - 49 Stein spaces
 - 50 Analytic sheaves and cohomology theory
 - 60 Holomorphic mappings
 - 65 Automorphic functions
 - 70 Approximation theorems
 - 80 Nonarchimedean function theory
- 33. SPECIAL FUNCTIONS
 - 04 Number-theoretic functions, special sequences
 - 10 Exponential and trigonometric functions

- 15 Gamma and beta functions
- 17 Error function, probability integral
- 19 Elliptic functions and integrals
- 20 Hypergeometric functions, generalizations
- 21 E -functions, G -functions
- 25 Cylindrical functions; Bessel functions
- 27 Spherical functions; Legendre polynomials and functions, spherical harmonics, ultraspherical polynomials
- 28 Lamé, Mathieu, spheroidal wave functions
- 30 Wave functions
- 32 Gegenbauer functions
- 40 Orthogonal special functions and polynomials (Čebyšev, Hermite, Jacobi, Laguerre, etc.) (See also 42.15)
- 45 Other special functions
- 50 Special functions and Lie groups

34. ORDINARY DIFFERENTIAL EQUATIONS

- 02 Solutions in closed form; integration by quadratures; reduction of differential equations
- 04 General existence and uniqueness theorems; continuous dependence of solution on parameter, initial and boundary conditions
- 06 Differential equations in the complex domain
- 10 Analytical theory: series, transformations, transforms, operational calculus, etc.
- 20 Linear equations and systems, general
- 30 Boundary value problems for linear equations: spectral theory, asymptotic behavior of eigenfunctions, distribution of eigenvalues (See also 47.60)
- 36 Nonlinear and multi-point boundary value problems
- 40 Qualitative theory, general
- 41 Limit cycles, singular points
- 42 Zeros, growth, oscillation and comparison of solutions
- 45 Nonlinear oscillations, periodic and almost periodic solutions, integral manifolds, averaging method
- 50 Asymptotic expansions, asymptotic behavior of solutions, turning points
- 51 Stability
- 53 Perturbations
- 54 Singular perturbations; small parameter with highest derivative
- 60 Equations and systems with randomness (See 60.75 for stochastic differential equations)
- 65 Dynamical systems, systems on manifolds
- 70 Differential equations of infinite order
- 75 Functional differential equations: differential-difference equations, equations with retarded argument
- 85 Optimal control problems
- 90 Differential inequalities
- 95 Differential equations in Banach and other abstract spaces

35. PARTIAL DIFFERENTIAL EQUATIONS

- 01 Existence and uniqueness theorems, general
- 02 Successive approximations
- 03 Cauchy-Kowalewski theorems, series solutions
- 04 Variational methods, a priori estimates
- 05 Analytic methods; singularities
- 06 Other special methods
- 07 Dependence of solutions on initial and boundary data, parameters
- 09 Geometric theory, characteristics, transformations
- 10 Qualitative theory, general
- 11 Comparison theorems; oscillation, zeros and growth of solutions
- 12 Periodic solutions
- 13 Perturbations
- 14 Singular perturbations, almost periodic solutions
- 15 Stability and control, boundedness
- 16 Asymptotic behavior of solutions
- 19 Differential inequalities; a priori estimates
- 20 Generalized solutions

SUBJECT CLASSIFICATION

- 21 Embedding theorems, Sobolev spaces (See also 46.38)
 - 23 Pseudodifferential operators (See also 47.65)
 - 24 Regularity of generalized solutions
 - 30 Linear equations and systems, first order
 - 31 Linear equations and systems, higher order
 - 35 Nonlinear equations and systems, first order
 - 36 Nonlinear equations and systems, higher order
 - 37 Cauchy problems
 - 38 Discontinuous coefficients or data
 - 39 Equations and systems with constant coefficients
 - 42 Second order elliptic equations
 - 43 Higher order elliptic equations
 - 44 Elliptic systems (linear or nonlinear)
 - 45 Boundary value problems for elliptic equations
 - 46 Boundary value problems for elliptic systems
 - 47 Quasilinear elliptic equations and systems
 - 48 Hypoelliptic equations and systems
 - 52 Second order hyperbolic equations
 - 53 Hyperbolic systems, hyperbolic equations of higher order
 - 55 Boundary value problems for hyperbolic equations and systems
 - 57 Quasilinear hyperbolic equations and systems
 - 62 Second order parabolic equations
 - 63 Parabolic systems, parabolic equations of higher order
 - 65 Boundary value problems for parabolic equations and systems
 - 70 Equations and systems of mixed type (boundary value problems, etc.)
 - 75 Laplace's equation, reduced wave equation, Poisson's equation
 - 76 Wave equation
 - 77 Schrödinger equation
 - 78 Heat equation
 - 79 Other special equations and problems
 - 80 Eigenvalue problems, spectral theory, eigenfunction expansions (See also 47.65)
 - 88 Difference-partial differential equations; equations with time lag
 - 95 Operator equations, general (See also 34.95)
 - 96 Equations on manifolds
 - 97 Equations in function spaces
39. FINITE DIFFERENCES AND FUNCTIONAL EQUATIONS
- 10 Finite differences, general
 - 20 Difference equations (See also 65.70)
 - 30 Functional equations, general
 - 31 Classical functional equations
 - 33 Linear and multilinear functional equations
 - 35 Functional equations in several variables, systems
 - 37 Matrix functional equations
 - 38 Functional equations on abstract structures
40. SEQUENCES, SERIES, SUMMABILITY
- 10 Series and sequences of numbers, general
 - 11 Infinite products
 - 12 Continued fractions
 - 13 Convergence and divergence
 - 15 Multiple series and sequences
 - 20 Sequences and series of functions, convergence
 - 30 Summability, general methods
 - 31 Summability, matrix methods
 - 32 Cesàro summability
 - 33 Abel, Poisson summability
 - 35 Summability of double series
 - 40 Convergence and summability of integrals
 - 42 Tauberian theorems
 - 46 Functional-analytic methods in summability theory
 - 50 Summability in topological groups, linear spaces, etc.
41. APPROXIMATIONS AND EXPANSIONS
- 10 Interpolation
 - 15 Polynomial approximation (See also 30.70)
 - 17 Approximation by rational functions (See also 30.70)
 - 30 Approximation by other special function classes
 - 35 Approximation by operators (in particular, by integral operators)
 - 40 Best approximation
 - 41 Degree of approximation, rate of convergence
 - 44 Approximate quadratures
 - 50 Asymptotic expansions
 - 55 Constructive theory of functions
 - 60 Abstract approximation theory; approximation in normed linear spaces and other abstract spaces
42. FOURIER ANALYSIS
- 05 Trigonometric polynomials
 - 06 Best approximation by trigonometric polynomials
 - 08 Trigonometric interpolation
 - 10 Fourier coefficients
 - 11 Convergence of Fourier series
 - 12 Absolute convergence of Fourier series
 - 15 Orthogonal functions and polynomials, general (See also 33.40)
 - 16 Expansions in orthogonal functions and polynomials
 - 17 Completeness of sets of orthogonal functions
 - 18 Completeness, closure, spectral synthesis
 - 20 Summability of Fourier and generalized Fourier expansions
 - 25 Fourier transform
 - 26 Other Fourier-type transforms
 - 27 Trigonometric moment problems
 - 30 Almost periodic functions
 - 35 Positive definite functions
 - 40 Multiple Fourier series and integrals
 - 50 Abstract harmonic analysis (Fourier analysis on LCA groups) (See also 22.65)
 - 51 Characters, duality
 - 52 Fourier-Stieltjes transform
 - 54 Positive definite functions on LCA groups
 - 55 Convolution, factorization
 - 56 Measure algebras, group algebras (See also 46.80)
 - 58 Ideals, spectral synthesis
44. INTEGRAL TRANSFORMS, OPERATIONAL CALCULUS
- 10 Laplace transform
 - 25 Convolution
 - 28 General transforms
 - 30 Special transforms: Legendre, Hilbert, etc. (See also 45.33)
 - 32 Multiple transforms
 - 33 Transforms of special functions
 - 40 Operational calculus
 - 42 Operational calculus in several variables
 - 50 Fractional integrals (See also 26.43)
 - 60 Moment problems (See also 42.27)
45. INTEGRAL EQUATIONS
- 10 Linear integral equations, general (See also 47.70)
 - 11 Fredholm equations
 - 12 Eigenvalue problems
 - 13 Volterra equations
 - 15 Singular equations
 - 20 Systems of linear equations
 - 30 Nonlinear integral equations (See also 47.80)
 - 31 Singular nonlinear equations
 - 33 Miscellaneous special kernels (See also 44.30)
 - 40 Integro-differential equations, ordinary
 - 45 Integro-partial differential equations
46. FUNCTIONAL ANALYSIS
- 01 Topological linear spaces
 - 06 Ordered TLS; vector lattices
 - 10 Normed linear spaces, Banach spaces
 - 15 Inner product spaces, Hilbert spaces, spaces with an indefinite metric
 - 20 Other special spaces
 - 25 Spaces of continuous functions

SUBJECT CLASSIFICATION

- 30 Spaces of differentiable and analytic functions
 - 35 Spaces of measurable functions; L^p spaces, Orlicz spaces
 - 38 Sobolev spaces, embedding theorems, interpolation spaces (See also 35.21, 47.65)
 - 40 Distributions, generalized functions
 - 45 Derivatives and differentials in abstract spaces
 - 50 Topological algebras, normed rings and algebras, Banach algebras: general theory
 - 55 Commutative Banach algebras; function algebras
 - 60 Rings and algebras with an involution, \ast -algebras: general theory
 - 65 Rings and algebras of operators (with or without involution); C^\ast -algebras, von Neumann algebras
 - 80 Group algebras, convolution algebras (See also 22.65, 42.56)
 - 90 Miscellaneous applications of functional analysis
47. OPERATOR THEORY
- 10 Single linear operators, general theory
 - 20 Operators in ordered spaces
 - 25 Operators in function spaces and other special spaces (See also 28.70)
 - 30 Spectral theory, functional calculus
 - 35 Reducibility, invariant subspaces
 - 40 Structure, classification, canonical forms
 - 45 Compact (completely continuous) operators
 - 48 Perturbation theory
 - 50 Semigroups and groups of operators
 - 55 Other systems of operators (See also 46.65)
 - 60 Ordinary differential operators (See also 34.30)
 - 65 Partial differential operators (See also 35.80)
 - 70 Integral and integro-differential operators
 - 80 Nonlinear operators, general theory
 - 85 Fixed-point theorems (See also 54.85)
 - 90 Miscellaneous applications
49. CALCULUS OF VARIATIONS, OPTIMAL CONTROL (See also 93.40)
50. GEOMETRY (See also 14.00)
- 05 Foundations
 - 10 Euclidean
 - 14 Constructions
 - 20 Affine geometry, general
 - 25 Transformations
 - 30 Projective geometry, general
 - 35 Transformations
 - 38 Second-order loci
 - 40 Non-Euclidean geometry (i.e. hyperbolic or elliptic)
 - 48 Special geometries
 - 60 Finite geometries (See also 05.27)
 - 70 Projective planes
 - 90 Regular figures, divisions of space (See also 52.00)
52. CONVEX SETS AND GEOMETRIC INEQUALITIES
- 10 Convex polyhedra
 - 25 Convex curves
 - 30 Convex regions
 - 34 Helly-type theorems
 - 40 Extremum problems and geometric inequalities
 - 45 Packing and covering (See also 50.90)
 - 50 Distance geometries
53. DIFFERENTIAL GEOMETRY
- 01 Curves and surfaces in Euclidean spaces
 - 04 Minimal surfaces
 - 10 Affine differential geometry
 - 20 Projective differential geometry
 - 23 Differential line geometry
 - 25 Conformal differential geometry
 - 30 Non-Euclidean differential geometry
 - 32 Other special differential geometries
- 35 Vector and tensor analysis
 - 38 Spinor analysis
 - 40 Differentiable manifolds (general theory), e.g., definitions, jets, tangent bundles (See also 57.30)
 - 42 Differential invariants (local theory), geometric objects
 - 45 Differential calculus (global theory); forms, currents, integration, tensor fields, etc. (See also 57.50)
 - 50 Connections, general
 - 52 G -structures
 - 55 Affine connections
 - 60 Projective connections
 - 66 Homogeneous manifolds (See also 22.70, 57.45)
 - 70 Local Riemannian geometry
 - 72 Riemannian manifolds
 - 73 Symmetric spaces (See also 22.70, 57.45)
 - 74 Submanifolds, isometric imbeddings (See also 57.20)
 - 75 Global surface theory (convex surfaces)
 - 78 Lorentz metrics and generalizations
 - 80 Hermitian and Kählerian structures (See also 32.00, 57.60)
 - 85 Finsler spaces and generalizations (areal metrics)
 - 90 Integral geometry
 - 95 Direct methods (G -spaces of Busemann), geometric orders
 - 99 Other generalizations
54. GENERAL TOPOLOGY
- 10 Axiomatics; generalizations of topological spaces, syntopogenous spaces
 - 20 Topological spaces, general
 - 22 Convergence notions
 - 23 Separation axioms, T_i -spaces
 - 25 General constructs (products, quotients, limits, etc.)
 - 28 Function spaces
 - 30 Uniform structures, proximity spaces
 - 35 Metric spaces, metrizability
 - 38 Moore spaces
 - 40 Countability conditions, separability, Lindelöf spaces
 - 50 Paracompact spaces
 - 52 Compactness, local compactness, generalizations
 - 53 Compactifications, other extensions
 - 55 Connectedness, continua
 - 56 Ordered topological spaces (See also 06.65)
 - 60 Mappings
 - 65 Set-valued mappings
 - 70 Dimension theory (See also 55.38)
 - 75 Topology of E_n , 2-manifolds
 - 78 Topology of E_n , n -manifolds ($n > 2$)
 - 80 Transformation groups and semigroups (See also 22.40)
 - 82 Topological dynamics
 - 85 Fixed-point theorems, coincidence theorems, etc. (See also 47.85)
55. ALGEBRAIC TOPOLOGY
- 10 Graphs, map-coloring (See also 05.40)
 - 20 Knots, links (See also 57.20)
 - 25 Cell-complexes, simplicial complexes
 - 30 Homology and cohomology theories; K -theory
 - 32 Sheaves
 - 34 Cohomology operations, Steenrod algebra
 - 36 Periodic transformations, fixed points, coincidences (Smith theory)
 - 38 Dimension theory (See also 54.70)
 - 40 Homotopy theory, general
 - 42 Algebra of mappings (including cohomotopy groups)
 - 45 Computation of homotopy groups
 - 50 Fiber spaces (See also 57.30)
 - 52 Spectral sequences
 - 60 Manifolds (See also 53.40, 54.78, 57.01)
 - 66 Generalized manifolds, local homology
 - 68 Homotopy manifolds
 - 70 Imbedding, immersion (See also 57.20)

57. TOPOLOGY AND GEOMETRY OF MANIFOLDS

- 01 Topological manifolds, combinatorial manifolds (See also 55.60)
- 05 Geometric topology
- 10 Differentiable structures, cobordism
- 20 Differentiable mappings, imbeddings, immersions, diffeomorphisms (See also 53.74, 55.70)
- 30 Fiber bundles, vector bundles (See also 53.40, 55.50)
- 31 Topology of differentiable manifolds (See also 54.78)
- 32 Characteristic classes
- 34 Topology of vector and tensor fields
- 36 Foliations (See also 34.65)
- 40 Topology of Lie groups
- 45 Topology of homogeneous spaces (See also 22.70, 53.66, 53.73)
- 47 Transformation groups (See also 22.40, 54.80)
- 50 Analysis on differentiable manifolds (See also 53.72)
- 55 Infinite-dimensional manifolds
- 60 Complex manifolds (See also 32.00, 53.80)
- 70 Infinite Lie groups, deformations

60. PROBABILITY

- 02 Axioms, foundations
- 05 Probabilistic measure theory
- 08 Probability in topological groups, other structures
- 10 Combinatorial probability
- 15 Geometric probability
- 20 Distributions, characteristic functions
- 30 Limit theorems
- 40 Stochastic processes, general theory
- 50 Stationary processes
- 60 Markov processes, general
- 62 Hunt processes, diffusion processes, Brownian motion, probabilistic potential theory
- 65 Markov chains
- 66 Random walks
- 67 Branching processes; Galton-Watson, birth-and-death processes
- 69 Other special processes
- 70 Renewal theory
- 75 Stochastic differential and integral equations
- 80 Queueing, congestion, allocation, storage
- 90 Other applications

62. STATISTICS

- 05 Foundations: axiomatics, sufficiency, invariance, other general considerations
- 10 Distribution theory
- 15 Asymptotic theory
- 16 Exact and asymptotic efficiency
- 20 Estimation: parametric case
- 25 Hypothesis testing: parametric case
- 30 Decision theory
- 31 Ranking and selection
- 35 Bayesian inference
- 40 Multivariate analysis
- 41 Classification and discrimination
- 45 Sequential methods
- 50 Information-theoretic methods
- 55 Linear statistical inference, regression analysis
- 56 Analysis of variance; hierarchical models
- 60 Design and analysis of experiments, general
- 61 Construction of designs (See also 05.20)
- 62 Optimal designs
- 63 Factorial designs
- 64 Paired and multiple comparisons
- 70 Non-parametric methods
- 71 Goodness-of-fit tests
- 75 Order statistics
- 80 Engineering statistics; life testing and reliability, quality control
- 85 Statistical analysis of stochastic processes; time series

- 90 Sample surveys
- 95 Count data, contingency tables
- 97 Biometrics
- 99 Other applications

65. NUMERICAL METHODS

- 05 Tables, construction of tables
- 10 General mathematical methods; iteration, acceleration of convergence, numerical experiments
- 15 Monte Carlo methods
- 20 Interpolation, smoothing, least squares, curve fitting, approximation of functions
- 25 Computation of special functions, series, integrals
- 30 Mathematical programming and optimization techniques
- 33 Linear inequalities
- 35 Linear equations, determinants, matrices
- 40 Eigenvalues, eigenvectors
- 50 Solution of algebraic and transcendental equations and systems
- 55 Numerical differentiation and integration, quadrature, cubature, etc.
- 60 Ordinary differential equations, general
- 61 Initial value problems
- 62 Boundary value problems
- 65 Partial differential equations, general
- 66 Elliptic equations
- 67 Hyperbolic equations
- 68 Parabolic equations
- 70 Difference and functional equations
- 75 Integral and integro-differential equations
- 80 Error analysis
- 82 Miscellaneous inequalities
- 85 Graphical methods
- 90 Harmonic analysis and synthesis

68. COMPUTING MACHINES

69. GENERAL APPLIED MATHEMATICS

70. MECHANICS OF PARTICLES AND SYSTEMS

- 34 Ordinary differential equations
- 35 Partial differential equations
- 45 Integral and integro-differential equations
- 49 Calculus of variations
- 60 Probability
- 65 Numerical methods

73. ELASTICITY, PLASTICITY

- 34 Ordinary differential equations
- 35 Partial differential equations
- 44 Integral transforms
- 45 Integral and integro-differential equations
- 46 Functional analysis
- 49 Calculus of variations
- 60 Probability
- 65 Numerical methods

76. FLUID MECHANICS, ACOUSTICS

- 34 Ordinary differential equations
- 35 Partial differential equations
- 41 Approximations and expansions
- 44 Integral transforms
- 45 Integral and integro-differential equations
- 46 Functional analysis
- 49 Calculus of variations
- 60 Probability
- 65 Numerical methods

78. OPTICS, ELECTROMAGNETIC THEORY

- 31 Potential theory
- 34 Ordinary differential equations
- 35 Partial differential equations

SUBJECT CLASSIFICATION

- 45 Integral and integro-differential equations
- 65 Numerical methods
80. CLASSICAL THERMODYNAMICS, HEAT TRANSFER
 - 31 Potential theory
 - 35 Partial differential equations
81. QUANTUM MECHANICS
 - 06 Order, lattices
 - 22 Lie groups and algebras, representations
 - 30 Functions of a complex variable
 - 31 Potential theory
 - 32 Several complex variables
 - 34 Ordinary differential equations
 - 35 Partial differential equations
 - 45 Integral and integro-differential equations
 - 46 Functional analysis; C^* -algebras
 - 47 Operator theory
 - 60 Probability
 - 62 Statistics
82. STATISTICAL PHYSICS, STRUCTURE OF MATTER
 - 20 Group theory
 - 45 Integral and integro-differential equations
 - 62 Statistics
83. RELATIVITY
 - 35 Partial differential equations
 - 53 Differential geometry
85. ASTRONOMY AND ASTROPHYSICS
86. GEOPHYSICS
90. ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES
 - 10 Economics
 - 30 Operations research
- 40 Multi-stage decision processes, dynamic programming (general)
- 50 Linear programming
- 56 Integer programming
- 57 Stochastic programming
- 58 Nonlinear programming, general
- 59 Quadratic programming
- 60 Convex programming
- 70 Game theory
- 72 Stochastic games
- 75 Differential and continuous games (See also 93.40)
92. BIOLOGY AND BEHAVIORAL SCIENCES
 - 10 Biology
 - 20 Genetics
 - 30 Population dynamics, epidemiology
 - 40 Sociology
 - 50 Psychology
93. SYSTEMS, CONTROL
 - 10 Systems, general
 - 20 Stability, qualitative behavior
 - 40 Optimal control (See also 34.85, 35.15, 49.00, 90.00)
 - 60 Stochastic control
 - 70 Adaptive control
94. INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA
 - 10 Communication theory
 - 20 Information theory
 - 30 Circuits, networks; applications of graph theory, Boolean algebra
 - 40 Automata, general (See also 02.88)
 - 45 Probabilistic automata
 - 50 Linguistics, formal languages

ABBREVIATIONS OF NAMES OF JOURNALS

This list gives the form of references used in MATHEMATICAL REVIEWS and the complete title; the place of publication and other pertinent information are given in parentheses when desirable for clarity.

- Abh. Akad. Wiss. Göttingen Math.-Phys. Kl.* Abhandlungen der Akademie der Wissenschaften in Göttingen. Mathematisch-Physikalische Klasse. (Göttingen)
- Abh. Braunschweig. Wiss. Gesell.* Abhandlungen der Braunschweigischen Wissenschaftlichen Gesellschaft. (Braunschweig)
- Abh. Deutsch. Akad. Wiss. Berlin Kl. Math. Phys. Tech.* Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin. Klasse für Mathematik, Physik und Technik. (Berlin)
- Abh. Math. Sem. Univ. Hamburg.* Abhandlungen aus dem Mathematischen Seminar der Universität Hamburg. (Hamburg)
- Abh. Sächs. Akad. Wiss. Leipzig Math.-Natur. Kl.* Abhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig. Mathematisch-Naturwissenschaftliche Klasse. (Leipzig)
- Abstracts Bulgarian Sci. Lit. Math. Phys. Astronom. Geophys. Geodes.* Bulgarian Academy of Sciences. Centre of Scientific Information and Documentation. Abstracts of Bulgarian Scientific Literature. Mathematics, Physics, Astronomy, Geophysics, Geodesy. (Sofia)
- Acad. Roy. Belg. Bull. Cl. Sci.* Académie Royale de Belgique. Bulletin de la Classe des Sciences. Koninklijke Belgische Academie. Mededelingen van de Klasse der Wetenschappen. (Brussels)
- Acad. Roy. Belg. Cl. Sci. Mém. Coll. in-8°.* Académie Royale de Belgique. Classe des Sciences. Mémoires. Collection in-8°. Koninklijke Belgische Academie. Klasse der Wetenschappen. Verhandeligen. Verzameling in-8°. (Brussels)
- Acad. Serbe Sci. Arts Glas.* Académie Serbe des Sciences et des Arts. Glas. Classe des Sciences Mathématiques et Naturelles. Nouvelle Série. (Belgrade)
- Accad. Naz. Sci. Lett. Arti Modena Atti Mem.* Accademia Nazionale di Scienze Lettere e Arti. Modena. Atti e Memorie. (Modena)
- Acta Acad. Åbo. Ser. B.* Acta Academiae Åboensis, Ser. B. Mathematica et Physica. Matematik-Naturvetenskap-Teknik. (Åbo = Turku)
- Acta Acust. Sinica.* Acta Acustica Sinica. (Peking)
- Acta Arith.* Polska Akademia Nauk. Instytut Matematyczny. Acta Arithmetica. (Warsaw)
- Acta Astronom. Sinica.* Acta Astronomica Sinica. (Peking)
- Acta Ci. Compostelana.* Acta Científica Compostelana. (Santiago de Compostela)
- Acta Ci. Venezolana.* Acta Científica Venezolana. Asociación Venezolana para el Avance de la Ciencia. (Caracas)
- Acta Fac. Rerum Natur. Univ. Comenian.* Acta Facultatis Rerum Naturalium Universitatis Comenianae. (Bratislava) (Continued as: *Acta Fac. Rerum Natur. Univ. Comenian. Math.*)
- Acta Fac. Rerum Natur. Univ. Comenian. Math.* Acta Facultatis Rerum Naturalium Universitatis Comenianae. Mathematica. (Bratislava) (Formerly: *Acta Fac. Rerum Natur. Univ. Comenian.*)
- Acta Math.* Acta Mathematica. (Uppsala)
- Acta Math. Acad. Sci. Hungar.* Acta Mathematica Academiae Scientiarum Hungaricae. (Budapest)
- Acta Math. Sinica.* Acta Mathematica Sinica. (Peking) (Translated as: *Chinese Math.—Acta*)
- Acta Mech.* Acta Mechanica. (Vienna)
- Acta Mech. Sinica (New York).* Acta Mechanica Sinica. (New York) (Translation of *Acta Mech. Sinica (Peking)*)
- Acta Mech. Sinica (Peking).* Acta Mechanica Sinica. (Peking) (Translated as: *Acta Mech. Sinica (New York)*)
- Acta Mexicana Ci. Tecn.* Instituto Politécnico Nacional. Acta Mexicana de Ciencia y Tecnología. (Mexico City)
- Acta Philos. Fenn.* Acta Philosophica Fennica. (Helsinki)
- Acta Phys. Acad. Sci. Hungar.* Acta Physica Academiae Scientiarum Hungaricae. (Budapest)
- Acta Phys. Austriaca.* Acta Physica Austriaca. (Vienna)
- Acta Phys. Sinica.* Acta Physica Sinica. (Peking) (Translated as: *Chinese J. Phys. (Peking)*)
- Acta Polytech. Scand. Math. and Comput. Mach. Ser.* Acta Polytechnica Scandinavica. Mathematics and Computing Machinery Series. (Stockholm)
- Acta Sci. Math. (Szeged).* Acta Universitatis Szegediensis. Acta Scientiarum Mathematicarum. (Szeged)
- Acta Sci. Natur. Univ. Pekinensis.* Acta Scientiarum Naturalium Universitatis Pekinensis. (Peking)
- Acta Tech. Acad. Sci. Hungar.* Acta Technica Academiae Scientiarum Hungaricae. (Budapest)
- Acta Tech. ČSAV.* Acta Technica. Československá Akademie Věd. (Prague)
- Acta Univ. Tamper. Ser. A.* Acta Universitatis Tampereensis. Series A. (Helsinki)
- Acta Univ. Wratislav.* Acta Universitatis Wratislaviensis. (Wrocław)
- Actualités Sci. Indust.* Actualités Scientifiques et Industrielles. (Paris)
- Advances in Appl. Probability.* Advances in Applied Probability. (Sheffield)
- Advances in Math.* Advances in Mathematics. (New York)
- Aequationes Math.* Aequationes Mathematicae. (Basel-Waterloo)
- AIAA J.* AIAA Journal. American Institute of Aeronautics and Astronautics. (Easton, Pa.)
- Akad. Nauk Armjan. SSR Dokl.* Akademija Nauk Armjanskoi SSR. Doklady. (Erevan)
- Akad. Nauk Azerbaidžan. SSR Dokl.* Akademija Nauk Azerbaidžanskoi SSR. Doklady. (Baku)
- Akad. Nauk Azerbaidžan. SSR Trudy Inst. Mat. Meh.* Akademija Nauk Azerbaidžanskoi SSR. Trudy Instituta Matematiki i Mexaniki. (Baku)
- Akad. Nauk Gruzin. SSR Trudy Tbilis. Mat. Inst. Razmadze.* Akademija Nauk Gruzinskoi SSR. Trudy Tbilisskogo Matematičeskogo Instituta im. A. M. Razmadze. (Tbilisi) See Sakharth. SSR Mecn. Akad. Math. Inst. Šrom.
- Akad. Nauk Kazah. SSR Trudy Astrofiz. Inst.* Akademija Nauk Kazahskoi SSR. Trudy Astrofizičeskogo Instituta. (Alma-Ata)
- Akad. Nauk Kazah. SSR Trudy Sekt. Mat. Meh.* Akademija Nauk Kazahskoi SSR. Trudy Sektora Matematiki i Mexaniki. (Alma-Ata)
- Akad. Nauk SSSR Sibirk. Otdel. Inst. Avtomat. Elektrometr. Trudy.* Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Avtomatiki i Elektrometrii. Trudy. (Novosibirsk)

ABBREVIATIONS OF NAMES OF JOURNALS

- Akad. Nauk SSSR Trudy Yakutsk. Filial. Ser. Fiz.* Akademija Nauk SSSR. Trudy Yakutskogo Filiala. Serija fizičeskaja. (Moscow)
- Akad. Nauk Uzbek. SSR Trudy Inst. Mat.* Akademija Nauk Uzbekskoi SSR. Trudy Instituta Matematiki im. V. I. Romanovskogo. (Tashkent)
- Akad. Wiss. Lit. Mainz Abh. Math.-Natur. Kl.* Akademie der Wissenschaften und der Literatur in Mainz. Abhandlungen der Mathematisch-Naturwissenschaftlichen Klasse. (Wiesbaden)
- Akust. Ž.* Akademija Nauk SSSR. Akustičeskij Žurnal. (Moscow) (Translated as: *Soviet Physics Acoust.*)
- Algebra i Logika Sem.* Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Matematiki. Algebra i Logika. Seminar. (Novosibirsk) (Continued as: *Algebra i Logika*)
- Algebra i Logika.* Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Matematiki. Algebra i Logika. (Novosibirsk) (Formerly: *Algebra i Logika Sem.*)
- Algoritmy i Algoritm. Jazyki.* Vyčislitel'nyĭ Centr Akademii Nauk SSSR. Algoritmy i Algoritmicheskie Jazyki. (Moscow)
- Algorytmy.* Algorytmy. Prace Instytutu Maszyn Matematycznych Polskiej Akademii Nauk. (Warsaw)
- Allgemein. Statist. Arch.* Allgemeines statistisches Archiv. Organ der Deutschen Statistischen Gesellschaft. (Munich)
- Amer. J. Math.* American Journal of Mathematics. (Baltimore, Md.)
- Amer. J. Phys.* American Journal of Physics. (New York)
- Amer. Math. Monthly.* The American Mathematical Monthly. (Buffalo, N.Y.)
- Amer. Math. Soc. Transl.* American Mathematical Society Translations. (Providence, R.I.)
- Amer. Statist.* The American Statistician. (Washington, D.C.)
- AMR.* Applied Mechanics Reviews. (New York)
- An. Acad. Brasil. Ci.* Anais da Academia Brasileira de Ciências. (Rio de Janeiro)
- An. Fac. Ci. Univ. Porto.* Anais da Faculdade de Ciências. Universidade do Porto. (Porto, Portugal)
- An. Inst. Mat. Univ. Nac. Autónoma México.* Anales del Instituto de Matemáticas. Universidad Nacional Autónoma de México. (Mexico City)
- An. Ști. Univ. "Al. I. Cuza" Iași Sec. I a Mat.* Analele Științifice ale Universității "Al. I. Cuza" din Iași. (Seria Nouă). Secțiunea I a Matematică. (Iași)
- An. Univ. București Ser. Acta Logica.* Analele Universității București. Seria Acta Logica. (Bucharest)
- An. Univ. București Ser. Ști. Natur. Fiz.* Analele Universității București. Seria Științele Naturii. Fizică. (Bucharest)
- An. Univ. București Ser. Ști. Natur. Mat.-Mec.* Analele Universității București. Seria Științele Naturii. Matematică-Mecanică. (Bucharest)
- An. Univ. Timișoara Ser. Ști. Mat.-Fiz.* Analele Universității din Timișoara. Seria Științe Matematico-Fizice. (Timișoara)
- Ann. Acad. Sci. Fenn. Ser. A I.* Suomalaisen Tiedekatemian Toimituksia. Sarja A. Annales Academiæ Scientiarum Fennicæ. Series A. I. Mathematica. (Helsinki)
- Ann. Acad. Sci. Fenn. Ser. A VI.* Suomalaisen Tiedekatemian Toimituksia. Sarja A. Annales Academiæ Scientiarum Fennicæ. Series A. VI. Physica. (Helsinki)
- Ann. École Nat. Sup. Méc. Nantes.* Annales. École Nationale Supérieure de Mécanique. (Nantes)
- Ann. Fac. Sci. Univ. Toulouse.* Annales de la Faculté des Sciences de l'Université de Toulouse pour les Sciences Mathématiques et les Sciences Physiques. (Toulouse)
- Ann. Inst. Fourier (Grenoble).* Université de Grenoble. Annales de l'Institut Fourier. (Grenoble)
- Ann. Inst. H. Poincaré Sect. A.* Annales de l'Institut Henri Poincaré. Section A: Physique théorique. (Paris)
- Ann. Inst. H. Poincaré Sect. B.* Annales de l'Institut Henri Poincaré. Section B: Calcul des probabilités et statistique. (Paris)
- Ann. Inst. Statist. Math.* Annals of the Institute of Statistical Mathematics. (Tokyo)
- Ann. Japan Assoc. Philos. Sci.* Annals of the Japan Association for Philosophy of Science. (Tokyo)
- Ann. Mat. Pura Appl.* Annali di Matematica Pura ed Applicata. (Bologna)
- Ann. Math. Logic.* Annals of Mathematical Logic. (Amsterdam)
- Ann. Math. Statist.* The Annals of Mathematical Statistics. (Baltimore, Md.)
- Ann. of Math.* Annals of Mathematics. (Princeton, N.J.)
- Ann. of Sci.* Annales of Science. (London)
- Ann. Physics.* Annals of Physics. (New York)
- Ann. Physik.* Annalen der Physik. (Leipzig)
- Ann. Physique.* Annales de Physique. (Paris)
- Ann. Polon. Math.* Polska Akademia Nauk. Annales Polonici Mathematici. (Warsaw)
- Ann. Sci. École Norm. Sup.* Annales Scientifiques de l'École Normale Supérieure. (Paris)
- Ann. Scuola Norm. Sup. Pisa.* Annali della Scuola Normale Superiore di Pisa. Scienze Fisiche e Matematiche. (Pisa)
- Ann. Soc. Sci. Bruxelles Sér. I.* Annales de la Société Scientifique de Bruxelles. Série I. Sciences Mathématiques, Astronomiques et Physiques. (Brussels)
- Ann. Télécommun.* Annales des Télécommunications. (Paris)
- Ann. Univ. Ferrara Sez. VII.* Annali dell'Università di Ferrara. (Nuovo Serie). Sezione VII. Scienze Matematiche. (Ferrara)
- Ann. Univ. Mariae Curie-Skłodowska Sect. A.* Annales Universitatis Mariae Curie-Skłodowska. Section A. Mathematica. (Lublin)
- Ann. Univ. Sarav. Math.-Natur. Fak.* Annales Universitatis Saraviensis. Mathematisch-Naturwissenschaftliche Fakultät. (Berlin)
- Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* Annales Universitatis Scientiarum Budapestinensis de Rolando Eötvös Nominatae. Sectio Mathematica. (Budapest)
- Ann. Univ. Turku. Ser. A I.* Annales Universitatis Turkuensis. Series A. I. Astronomica-Chemica-Physica-Mathematica. (Turku)
- Annuaire Univ. Sofia Fac. Math.* Godišnik na Sofijskija Universitet Matematičeski Fakultet. Annuaire de l'Université de Sofia. Faculté de Mathématiques. (Sofia)
- Annuaire Univ. Sofia Fac. Phys.* Godišnik na Sofijskija Universitet Fizičeski Fakultet. Annuaire de l'Université de Sofia. Faculté de Physique. (Sofia)
- Annual Rep. Coll. Lib. Arts Univ. Iwate.* Annual Report of the College of Liberal Arts, University of Iwate. (Kakuzanwaki)
- Appl. Mat.* Československá Akademie Věd. Aplikace Matematiky. (Prague)
- Appl. Mech. Rev.* Applied Mechanics Reviews. (New York) (Sometimes abbreviated as *AMR* in the text of *Math. Reviews*)
- Appl. Sci. Res.* Applied Scientific Research. (The Hague)
- Appl. Statist.* Applied Statistics. A Journal of the Royal Statistical Society. (London) (Continued as: *J. Roy. Statist. Soc. Ser. C Appl. Statist.*)
- Arbok Univ. Bergen Mat.-Natur. Ser.* Årbok for Universitetet i Bergen. Mat.-Naturv. Serie. (Bergen)
- Arch. Automat. i Telemekh.* Instytut Automatyki Polakiej Akademii Nauk. Archivum Automatyki i Telemekhaniki. (Warsaw)

ABBREVIATIONS OF NAMES OF JOURNALS

- Arch. Elek. Übertr.* Archiv der elektrischen Übertragung. (Stuttgart)
- Arch. History Exact Sci.* Archive for History of Exact Sciences. (Berlin)
- Arch. Internat. Histoire Sci.* Archives Internationales d'Histoire des Sciences. (Paris)
- Arch. Math. (Basel).* Archiv der Mathematik. Archives of Mathematics. Archives Mathématiques. (Basel-Stuttgart)
- Arch. Math. (Brno).* Spisy Přírodovědecké Fakulty University J. E. Purkyně v Brně. Archivum Mathematicum. (Brno)
- Arch. Math. Logik Grundlagenforsch.* Archiv für mathematische Logik und Grundlagenforschung. (Stuttgart)
- Arch. Mech. Stos.* Polska Akademia Nauk. Instytut Podstawowych Problemów Techniki. Archiwum Mechaniki Stosowanej. (Warsaw)
- Arch. Rational Mech. Anal.* Archive for Rational Mechanics and Analysis. (Berlin)
- Archimede.* Archimede. Rivista per gli Insegnanti e i Cultori di Matematiche Pure e Applicate. (Florence)
- Ark. Astronom.* Arkiv för Astronomi. (Stockholm)
- Ark. Fys.* Arkiv för Fysik. (Stockholm)
- Ark. Mat.* Arkiv för Matematik. (Stockholm)
- Arkhimedes.* Arkhimedes. Suomen Fyysikköseura—Finlands Fysikerförening r.y. Suomen Matemaattinen Yhdistys—Finlands Matematiikka Förening r.y. (Helsinki)
- Armjan. Gos. Ped. Inst. Sb. Naučn. Trud. Ser. Fiz.-Mat.* Armjanskij Gosudarstvennyj Pedagogičeskij Institut imeni H. Abovjana. Sbornik Naučnyh Trudov. Serija Fiziko-Matematičeskaja. (Erevan) (Formerly: Erevan. Armjan. Gos. Ped. Inst. im. H. Abovjana Učen. Zap. Ser. Mat. Nauk)
- Arquiveo Inst. Gulbenkian Ci. A Estud. Mat. Fis.-Mat.* Arquivo do Instituto Gulbenkian de Ciência. A. Estudos Matemáticos e Físico-Matemáticos. (Lisbon)
- Assoc. Roy. Actuaire. Belges Bull.* Association Royale des Actuaire Belges. Bulletin. (Brussels)
- Astrofizika.* Akademija Nauk Armjanskol SSR. Astrofizika. (Erevan) (Translated as: *Astrophysics*)
- Astronaut. Acta.* Astronautica Acta. (Vienna)
- Astronom. and Astrophys.* Astronomy and Astrophysics. (Berlin) (Formerly: *Ann. Astrophys.*; *Bull. Astronom. Inst. Netherlands*; *Bull. Astronom.*; *Journal des Observateurs* and *Z. Astrophys.*)
- Astronom. J.* The Astronomical Journal. (New Haven, Conn.)
- Astronom. Jber.* Astronomischer Jahresbericht. (Berlin)
- Astronom. Nachr.* Astronomische Nachrichten. (Berlin)
- Astronom. Ž.* Akademija Nauk SSSR. Astronomičeskij Žurnal. (Moscow) (Translated as: *Soviet Astronom. AJ*)
- Astrophys. J.* The Astrophysical Journal. (Chicago, Ill.)
- Astrophysics.* Astrophysics. (A translation of *Astrofizika* of the Academy of Sciences of the Armenian SSR). (New York) (Translation of *Astrofizika*)
- Atti Accad. Gioenia Sci. Natur. Catania.* Atti della Accademia Gioenia di Scienze Naturali in Catania. (Catania)
- Atti Accad. Ligure Sci. Lett.* Atti della Accademia Ligure di Scienze e Lettere. (Genoa)
- Atti Accad. Naz. Lincei Mem. Cl. Sci. Fis. Mat. Natur. Sez. I.* Atti della Accademia Nazionale dei Lincei. Memorie. Classe di Scienze Fisiche, Matematiche e Naturali. Sezione I^a. (Matematica, Meccanica, Astronomia, Geodesia e Geofisica). (Rome)
- Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* Atti della Accademia Nazionale dei Lincei. Rendiconti. Classe di Scienze Fisiche, Matematiche e Naturali. (Rome)
- Atti Accad. Sci. Fis. Mat. Napoli.* Atti dell'Accademia delle Scienze Fisiche e Matematiche di Napoli. (Naples)
- Atti Accad. Sci. Ist. Bologna Cl. Sci. Fis. Rend.* Atti della Accademia delle Scienze dell'Istituto di Bologna. Classe di Scienze Fisiche. Rendiconti. (Bologna)
- Atti Accad. Sci. Lett. Arti Palermo Parte I.* Atti della Accademia di Scienze Lettere e Arti di Palermo. Parte Prima: Scienze. (Palermo)
- Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* Atti della Accademia delle Scienze di Torino. Classe di Scienze Fisiche, Matematiche e Naturali. (Turin)
- Atti Fond. Giorgio Ronchi Contrib. Ist. Naz. Ottica.* Atti della Fondazione Giorgio Ronchi e Contributi dell'Istituto Nazionale di Ottica. (Florence)
- Atti Sem. Mat. Fis. Univ. Modena.* Atti del Seminario Matematico e Fisico dell'Università di Modena. (Modena)
- Atti Soc. Peloritana Sci. Fis. Mat. Natur.* Atti della Società Peloritana di Scienze Fisiche Matematiche e Naturali. (Messina)
- Austral. Comput. J.* The Australian Computer Society. The Australian Computer Journal. (Chippendale)
- Austral. J. Phys.* Australian Journal of Physics. (Melbourne)
- Austral. J. Sci.* The Australian Journal of Science. (Sydney)
- Austral. J. Statist.* The Australian Journal of Statistics. (Sydney)
- Automat. Remote Control.* Automation and Remote Control. (A translation of *Automatika i Telemekhanika*, a publication of the Academy of Sciences of the USSR). (Pittsburgh, Pa.) (Translation of *Automat. i Telemekh.*)
- Automatica. Internat. J. Automat. Control Automation.* Automatica. The International Journal on Automatic Control and Automation. (Oxford) (Continued as: *Automatica—J. IFAC*)
- Automatica—J. IFAC.* Automatica. The Journal of IFAC the International Federation of Automatic Control. (Oxford) (Formerly: *Automatica. Internat. J. Automat. Control Automation*)
- Avtomat. i Telemekh.* Akademija Nauk Sojuz SSR. Avtomatika i Telemekhanika. (Moscow) (Translated as: *Avtomat. Remote Control*)
- Avtomat. i Vyčisl. Tehn.* Avtomatika i Vyčislitel'naja Tehnika. (Riga)
- Avtomatika.* Akademija Nauk Ukrain's'koj RSR. Institut Elektrotehniki. Avtomatika. (Kiev)
- Azerbajdzan. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat. i Him. Nauk.* Azerbajdzanskij Gosudarstvennyj Universitet im. S. M. Kirova. Učenyje Zapiski. Serija Fiziko-Matematičeskij i Himičeskij Nauk. (Baku) (Continued as: *Azerbajdzan. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat. Nauk*)
- Azerbajdzan. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat. Nauk.* Azerbajdzanskij Gosudarstvennyj Universitet im. S. M. Kirova. Učenyje Zapiski. Serija Fiziko-Matematičeskij Nauk. (Baku) (Formerly: *Azerbajdzan. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat. i Him. Nauk*)
- Balašov. Gos. Ped. Inst. Učen. Zap.* Balašovskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Balašov)
- Bašk. Gos. Univ. Učen. Zap.* Baškirkij Gosudarstvennyj Universitet. Učenyje Zapiski. (Ufa)
- Bayer. Akad. Wiss. Math.-Natur. Kl. Abh.* Bayerische Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse. Abhandlungen. (Munich)
- Bayer. Akad. Wiss. Math.-Natur. Kl. S.-B.* Bayerische Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse. Sitzungsberichte. (Munich)
- Beijing Daxue Xuebao Ziran Kexue.* See *Acta Sci. Natur. Unie. Pekinensis.*
- Bell System Tech. J.* The Bell System Technical Journal. (New York)
- Biometrics.* Biometrics. Journal of the Biometric Society. (Blackburg, Va.)
- Biometrika.* Biometrika. (London)
- BIT = Nordisk Tidsskr. Informationsbehandling (BIT).*
- Biul. Lubel. Towarz. Nauk. Wydział II Mat. Fiz. Chem.* Biuletyn Lubelskiego Towarzystwa Naukowego. Wydział II. Matematyka-Fizyka. Chemia. (Lublin)

ABBREVIATIONS OF NAMES OF JOURNALS

- Bull. Inst. Teoret. Astronom.* Akademija Nauk Sojuza Sovetskikh Socialističeskikh Respublik. Bjušten' Instituta Teoretičeskoj Astronomii. (Moscow)
- B'lgar. Akad. Nauk. Otd. Mat. Fiz. Nauk. Izv. Fiz. Inst. s Anob.* B'lgarska Akademija na Naukite. Otdelenie a Matematičeski i Fizičeski Nauki. Izvestija na Fizičeskija Institut s Anob. (Sofia)
- B'lgar. Akad. Nauk. Otd. Mat. Fiz. Nauk. Izv. Mat. Inst.* B'lgarska Akademija na Naukite. Otdelenie za Matematičeski i Fizičeski Nauki. Izvestija na Matematičeskija Institut. (Sofia)
- Bol. Fac. Ingen. Agrimens. Montevideo.* Boletín de la Facultad de Ingenieria y Agrimensura de Montevideo. (Montevideo)
- Bol. Mat.* Boletín de Matemáticas. (Bogotá)
- Bol. Soc. Mat. Mexicana.* Boletín de la Sociedad Matemática Mexicana. (Mexico City)
- Bol. Soc. Mat. São Paulo.* Boletim da Sociedade de Matemática de São Paulo. (São Paulo)
- Bol. Univ. Paraná Inst. Fis.* Boletim da Universidade do Paraná. Conselho de Pesquisas. Instituto de Física. (Paraná)
- Boll. Un. Mat. Ital.* Bollettino della Unione Matematica Italiana. (Bologna)
- Bonn. Math. Schr.* Bonner Mathematische Schriften. (Bonn)
- British J. Hist. Sci.* British Society for the History of Science. British Journal for the History of Science. (London)
- British J. Math. Statist. Psychology.* The British Journal of Mathematical and Statistical Psychology. (London)
- British J. Philos. Sci.* The British Journal for the Philosophy of Science. (Edinburgh)
- Buharsk. Gos. Ped. Inst. Učen. Zap. Ser. Fiz.-Mat. Nauk.* Buharskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. Serija Fiziko-Matematičeskikh Nauk. (Bukhara)
- Bul. Akad. Štiince RSS Moldoven.* Akademija Nauk Moldavskoi SSR. Izvestija Akademii Nauk Moldavskoi SSR. Buletinul Akademief de Štiince a RSS Moldovenešt'. (Kishinev)
- Bul. Inst. Politehn. Braşov Ser. A Mec.* Buletinul Institutului Politehnic din Braşov. Seria A. Mecanică. (Braşov)
- Bul. Inst. Politehn. Bucureşti.* Buletinul Institutului Politehnic Bucureşti. (Bucharest)
- Bul. Inst. Politehn. Iaşi.* Buletinul Institutului Politehnic din Iaşi. Serie Nouă. (Iaşi)
- Bul. Şti. Inst. Politehn. Cluj.* Buletinul Ştiinţific al Institutului Politehnic din Cluj. (Cluj)
- Bul. Şti. Tehn. Inst. Politehn. Timişoara.* Buletinul Ştiinţific şi Tehnic al Institutului Politehnic Timişoara. Serie Nouă. (Timişoara)
- Bull. Acad. Polon. Sci. Sér. Sci. Math. Astronom. Phys.* Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Mathématiques, Astronomiques et Physiques. (Warsaw)
- Bull. Acad. Polon. Sci. Sér. Sci. Tech.* Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Techniques. (Warsaw) (Formerly: *Bull. Acad. Polon. Sci. Sér. Sci. Tech. Méc. Appl.* and *Bull. Acad. Polon. Sci. Sér. Sci. Tech. Méc. Théor.*)
- Bull. Acad. Polon. Sci. Sér. Sci. Tech. Méc. Appl.* Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Techniques Mécaniques Appliquées. (Warsaw) (Continued as: *Bull. Acad. Polon. Sci. Sér. Sci. Tech.*)
- Bull. Acad. Polon. Sci. Sér. Sci. Tech. Méc. Théor.* Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Techniques Mécaniques Théoriques. (Warsaw) (Continued as: *Bull. Acad. Polon. Sci. Sér. Sci. Tech.*)
- Bull. Acad. Serbe Sci. Arts Cl. Sci. Math. Natur. Sci. Math.* Bulletin de l'Académie Serbe des Sciences et des Arts. Classe des Sciences Mathématiques et Naturelles. Sciences Mathématiques. (Belgrade)
- Bull. Amer. Math. Soc.* Bulletin of the American Mathematical Society. (Providence, R.I.)
- Bull. Astronom.* Bulletin Astronomique. (Paris) (Continued as: *Astronom. and Astrophys.*)
- Bull. Astronom. Inst. Netherlands.* Bulletin of the Astronomical Institutes of the Netherlands. (Haarlem) (Continued as: *Astronom. and Astrophys.*)
- Bull. Austral. Math. Soc.* Bulletin of the Australian Mathematical Society. (St. Lucia)
- Bull. Calcutta Math. Soc.* Bulletin of the Calcutta Mathematical Society. (Calcutta)
- Bull. College Sci. (Baghdad).* Bulletin of the College of Science. (Baghdad)
- Bull. Earthquake Res. Inst. Univ. Tokyo.* Bulletin of the Earthquake Research Institute, University of Tokyo. (Tokyo)
- Bull. Fac. Ed. Univ. Kagoshima.* Bulletin of the Faculty of Education, University of Kagoshima. (Kagoshima)
- Bull. Fac. Ed. Utsunomiya Univ.* Bulletin of the Faculty of Education. Utsunomiya University. (Utsunomiya)
- Bull. Fac. Sci. Ibaraki Univ. Ser. A.* Bulletin of the Faculty of Science. Ibaraki University. Series A. Mathematics. (Ibaraki)
- Bull. Fukuoka Univ. Ed. III.* Bulletin of Fukuoka University of Education. Part III. Natural Sciences. (Fukuoka)
- Bull. Géodésique.* Bulletin Géodésique. (Paris)
- Bull. Inst. Internat. Statist.* Bulletin de l'Institut International de Statistique. (The Hague)
- Bull. Inst. Statist. Res. Training.* Institute of Statistical Research and Training. University of Dacca. The Bulletin of the Institute of Statistical Research and Training. (Dacca)
- Bull. Kyoto Univ. Education Ser. B.* Bulletin of the Kyoto University of Education. Series B. Mathematics and Natural Science. (Kyoto)
- Bull. Kyushu Inst. Tech. Math. Natur. Sci.* Bulletin of the Kyushu Institute of Technology. Mathematics, Natural Science. (Tobata)
- Bull. London Math. Soc.* The Bulletin of the London Mathematical Society. (London)
- Bull. Math. Biophys.* The Bulletin of Mathematical Biophysics. (Ann Arbor, Mich.)
- Bull. Math. Soc. Sci. Math. R. S. Roumanie.* Bulletin Mathématique de la Société des Sciences Mathématiques de la République Socialiste de Roumanie. (Bucharest)
- Bull. Math. Statist.* Bulletin of Mathematical Statistics. (Fukuoka)
- Bull. Nara Univ. Ed. Natur. Sci. Ser. B.* Bulletin of Nara University of Education. Natural Science. Series B. (Nara)
- Bull. Sci. Conseil Acad. RSF Yougoslav. Sect. A.* Bulletin Scientifique. Conseil des Académies de la RSF de Yougoslavie. Section A. (Zagreb)
- Bull. Sci. Engrg. Res. Lab. Waseda Univ.* Bulletin of Science and Engineering Research Laboratory. Waseda University. (Tokyo)
- Bull. Sci. Math.* Bulletin des Sciences Mathématiques. (Paris)
- Bull. Signal. Math. Pures Appl.* Ministère de l'Éducation Nationale. Centre National de la Recherche Scientifique. Bulletin Signalétique. Mathématiques Pures et Appliquées. (Paris)
- Bull. Soc. Math. Belg.* Bulletin de la Société Mathématique de Belgique. (Brussels)
- Bull. Soc. Math. France.* Bulletin de la Société Mathématique de France. (Paris)
- Bull. Soc. Math. Grèce.* Bulletin de la Société Mathématique de Grèce. (Athens)
- Bull. Soc. Math. Phys. Macédoine.* Bulletin de la Société des Mathématiciens et des Physiciens de la République Populaire de Macédoine. Bilten na Društvo na Matematikarite i Fizikarite od Socialistička Republika Makedonija. (Skopje)
- Bull. Soc. Roy. Sci. Liège.* Bulletin de la Société Royale des Sciences de Liège. (Liège)
- Bull. Soc. Sci. Lettres Lódz.* Bulletin de la Société des Sciences et des Lettres de Lódz. (Lódz)
- Bull. Tokyo Gakugei Univ.* Bulletin of Tokyo Gakugei University. (Tokyo)

ABBREVIATIONS OF NAMES OF JOURNALS

- Bull. Univ. Osaka Prefecture Ser. A.* Bulletin of University of Osaka Prefecture. Series A. Engineering and Natural Sciences. (Osaka)
- Bull. Yamagata Univ. (Nat. Sci.).* Bulletin of the Yamagata University. (Natural Science). (Yamagata)
- C. R. Acad. Bulgare Sci.* Doklady Bolgarskoj Akademii Nauk. Comptes Rendus de l'Académie Bulgare des Sciences. (Sofia)
- C. R. Acad. Sci. Paris Sér. A-B.* Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences. Séries A et B. (Paris)
- Cahiers Centre Études Recherche Opér.* Cahiers du Centre d'Études de Recherche Opérationnelle. (Brussels)
- Cahiers Rhodan.* Cahiers Rhodaniens. (Lyon)
- Cahiers Topologie Géom. Différentielle.* Cahiers de Topologie et Géométrie Différentielle. (Paris)
- Calcolo.* Calcolo. (Rome)
- Calcutta Statist. Assoc. Bull.* Calcutta Statistical Association Bulletin. (Calcutta)
- Canad. J. Math.* Canadian Journal of Mathematics. Journal Canadien de Mathématiques. (Toronto, Ont.)
- Canad. J. Phys.* Canadian Journal of Physics. (Ottawa, Ont.)
- Canad. Math. Bull.* Canadian Mathematical Bulletin. Bulletin Canadien de Mathématiques. (Toronto, Ont.)
- Časopis Pěst. Mat.* Československá Akademie Věd. Časopis pro Pěstování Matematiky. (Prague)
- Čečno-Inguš. Gos. Ped. Inst. Učen. Zap.* Čečno-Ingušskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Groznyj)
- Celestial Mech.* Celestial Mechanics. (Dordrecht)
- Čeljabinsk. Gos. Ped. Inst. Trudy.* Čeljabinskij Gosudarstvennyj Pedagogičeskij Institut. Trudy. (Chelyabinsk)
- Centaurus.* Centaurus. (Copenhagen)
- Chinese J. Phys. (Peking).* Chinese Journal of Physics (Peking). (A translation of *Acta Physica Sinica* of the Chinese Academy of Sciences, Peking) (New York) (Translation of *Acta Phys. Sinica*)
- Chinese Math.—Acta.* Chinese Mathematics. Translation of *Acta Mathematica Sinica*. (Providence, R.I.) (Translation of *Acta Math. Sinica*)
- Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-p'o.* (Academy of Science of the People's Republic of Korea. Bulletin) Cho-sŏn Min-ju-ŭi In-min Kong-hwa-kuk Kwa-hak-wŏn. T'ong-p'o. (Pyongyang) (Formerly: *Cho-sŏn Kwa-hak-wŏn T'ong-bo*)
- Cho-sŏn Kwa-hak-wŏn T'ong-bo.* (Academy of Science of the People's Democratic Republic of Korea. Bulletin) Cho-sŏn Min-ju-ŭi In-min Kong-hwa-kuk Kwa-hak-wŏn. T'ong-bo. (Pyongyang) (Continued as: *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-p'o*)
- Čitin. Gos. Ped. Inst. Učen. Zap.* Čitinskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Chita)
- Collect. Math.* Consejo Superior de Investigaciones Científicas. Universidad de Barcelona. Collectanea Mathematica. (Barcelona)
- Colloq. Math.* Colloquium Mathematicum. (Warsaw)
- Comm. ACM.* Communications of the Association for Computing Machinery. (New York)
- Comm. Dublin Inst. Adv. Studies Ser. A.* Communications of the Dublin Institute for Advanced Studies. Series A. (Dublin)
- Comm. Fac. Sci. Univ. Ankara Sér. A.* Communications de la Faculté des Sciences de l'Université d'Ankara. Série A. Mathématiques-Physique-Astronomie. (Ankara)
- Comm. Math. Phys.* Communications in Mathematical Physics. (New York)
- Comm. Pure Appl. Math.* Communications on Pure and Applied Mathematics. (New York)
- Comment. Math. Helv.* Commentarii Mathematici Helvetici. (Zürich)
- Comment. Math. Univ. Carolinae.* Commentationes Mathematicae Universitatis Carolinae. (Prague)
- Comment. Math. Univ. St. Pauli.* Commentarii Mathematici Universitatis Sancti Pauli. Rikkyō Daigaku Sōgaku Zasshi. (Tokyo)
- Compositio Math.* Compositio Mathematica. (Groningen)
- Comput. and Control Abstracts.* Computer and Control Abstracts. (New York)
- Comput. J.* The Computer Journal. (London)
- Comput. Rev.* Computing Reviews. (New York) (Usually abbreviated *CR* in the text of *Math. Reviews*)
- Comput. Surveys.* Computing Surveys. ACM. (New York)
- Computing (Arch. Elektron. Rechnen).* Computing. Archiv für elektronisches Rechnen. Archives for Electronic Computing. (Vienna)
- Confer. Sem. Mat. Univ. Bari.* Conferenze del Seminario di Matematica dell'Università di Bari. (Bari)
- Contents Contemporary Math. J.* Contents of Contemporary Mathematical Journals. (Providence, R.I.)
- CORS J.* CORS J. The Canadian Operational Research Society Journal. (Toronto, Ont.)
- CR.* Computing Reviews. (New York)
- Čuvaš. Gos. Ped. Inst. Učen. Zap.* Ministerstvo Prosvešćenija RSFSR. Čuvaškij Gosudarstvennyj Pedagogičeskij Institut im. I. Ja. Jakovleva. Učenyje Zapiski. (Cheboksary)
- Cybernetics.* Cybernetics. (New York) (A translation of *Kybernetika* (Kiev))
- Czasopis. Techn.* Politechnika Krakowska i Krakowskie Zjednoczenie Budownictwa. Czasopismo Techniczne. (Kraków)
- Czechoslovak J. Phys. Sect. B.* Československá Akademie Nauk. Československij Fizičeskij Žurnal. Czechoslovak Academy of Sciences. Czechoslovak Journal of Physics. Section B. (Prague)
- Czechoslovak Math. J.* Československá Akademie Nauk. Československij Matematičeskij Žurnal. Czechoslovak Mathematical Journal. (Prague)
- Dal'nevostoč. Gos. Univ. Učen. Zap.* Dal'nevostočnyj Gosudarstvennyj Universitet. Učenyje Zapiski (Seriya fiziko-matematičeskikh Nauk). (Vladivostok)
- Danske Vid. Selsk. Mat.-Fys. Medd.* Det Kongelige Danske Videnskabsnernes Selskab Matematisk-fysiske Meddelelser. (Copenhagen)
- Defence Sci. J.* Defence Science Journal. (Delhi)
- Delta (Waukesha).* Delta. Waukesha Mathematics Society. (Waukesha, Wis.)
- Demonstratio Math.* Demonstratio Mathematica. (Warsaw) (Formerly: *Zeszyty Nauk. Politech. Warszawsk. Mat.*)
- Deutsch. Akad. Naturforsch. Nova Acta Leopoldina N.F.* Abhandlungen der Deutschen Akademie der Naturforscher Leopoldina. Nova Acta Leopoldina. (Leipzig) (Continued as: *Nova Acta Leopoldina (N.F.)*)
- Differencial'nye Uravneniya.* Diferencioal'nye Uravneniya. (Minsk) (Translated as: *Differential Equations*)
- Differential Equations.* Differential Equations. (New York) (Translation of *Differencial'nye Uravneniya*)
- Diskret. Analiz.* Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Matematiki. Diskretnyj Analiz. Sbornik Trudov. (Novosibirsk)
- Dissertationes Math. Rozprawy Mat.* Polskiej Akademii Nauk. Instytut Matematyczny. Dissertationes Mathematicae. Rozprawy Matematyczne. (Warsaw)
- Dokl. Akad. Nauk BSSR.* Doklady Akademii Nauk BSSR. (Minsk)
- Dokl. Akad. Nauk SSSR.* Doklady Akademii Nauk SSSR. (Moscow) (Mathematics section translated as: *Soviet Math. Dokl.*; Physics section translated as: *Soviet Physics Dokl.*)
- Dokl. Akad. Nauk Tadžik. SSR.* Doklady Akademii Nauk Tadžikskoi SSR. (Dushanbe)
- Dokl. Akad. Nauk UzSSR.* Doklady Akademii Nauk UzSSR. (Tashkent)

ABBREVIATIONS OF NAMES OF JOURNALS

- Dopovidí Akad. Nauk Ukraín. RSR Ser. A.* Dopovidí Akademii Nauk Ukraíns'koí RSR. Serija A. (Kiev)
- Dopovidí Akad. Nauk Ukraín. RSR Ser. B.* Dopovidí Akademii Nauk Ukraíns'koí RSR. Serija B. (Kiev)
- Duke Math. J.* Duke Mathematical Journal. (Durham, N.C.)
- Dukanbin. Gos. Ped. Inst. Učen. Zap.* Dukanbinskii Gosudarstvennyi Pedagogičeskii Institut im. T. G. Ševčenko. Učenyje Zapiski. (Dushanbe)
- Econom. Comput. Econom. Cybernet. Stud. Res.* Economic Computation and Economic Cybernetics Studies and Research. (Bucharest)
- Econometrica.* Econometrica. Journal of the Econometric Society. (Chicago, Ill.)
- EEA.* Science Abstracts. Electrical & Electronics Abstracts. (London)
- Eesti NSV Tead. Akad. Füüs. Astronoom. Inst. Uurim.* Eesti NSV Teaduste Akadeemia Füüsika ja Astronoomia Instituudi Uurimused. (Trudy Instituta Fiziki i Astronomii Akademii Nauk Estonskoí SSR). Publikacii Tartuakoi Astronomičeskoi Observatorii. (Tartu)
- Eesti NSV Tead. Akad. Tartu Astronoom. Observ. Publ.* Eesti NSV Teaduste Akadeemia Tartu Astronoomia Observatooriumi Publikatsioonid. (Tartu)
- Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* Eesti NSV Teaduste Akadeemia Toimetised. Füüsika-Matemaatika. Izvestija Akademii Nauk Estonskoí SSR. Serija Fizika-Matematika. (Tallin)
- Ekonom. i Mat. Metody.* Ekonomika i Matematičeskie Metody. (Moscow)
- Ekonom.-Mat. Obzor.* Československá Akademie Věd. Ekonomicko-Matematický Obzor. (Prague)
- Electrical & Electronics Abstracts.* Science Abstracts. Electrical & Electronics Abstracts. (London) (Usually abbreviated *EEA* in the text of *Math. Reviews*)
- Electron. Commun. Japan.* Institute of Electrical and Electronics Engineers. Electronics and Communications in Japan. (A translation of *Denki Tsushin Gakkai Zasshi* of the Institute of Electrical Communication Engineers of Japan.) (New York) (Translation of *Denki Tsushin Gakkai Zasshi*)
- Elektron. Informationsverarbeitung. Kybernetik.* Sektion für Kybernetik beim Präsidium der Deutschen Akademie der Wissenschaften zu Berlin und der Mathematischen Gesellschaft der Deutschen Demokratischen Republik. Elektronische Informationsverarbeitung und Kybernetik. (Berlin)
- Elem. Math.* Elemente der Mathematik. Revue de Mathématiques Élémentaires. Rivista de Matematica Elementare. (Basel)
- Engng. Cybernetics.* Engineering Cybernetics. English Edition of *Tehnikeskaja Kibernetika*. (New York) (Translation of *Izv. Akad. Nauk SSSR Tehn. Kibernet.*)
- Enseignement Math.* L'Enseignement Mathématique. (Geneva)
- Erevan. Armjan. Gos. Ped. Inst. im. H. Abovjana Učen. Zap. Ser. Mat. Nauk.* Erevanskii Armjanskii Gosudarstvennyi Pedagogičeskii Institut im. H. Abovjana. Učenyje Zapiski. Serija Matematičeskikh Nauk. (Erevan) (Continued as: *Armjan. Gos. Ped. Inst. Sb. Naučn. Trud. Ser. Fiz.-Mat.*)
- Estadist. Española.* Estadística Española. (Madrid)
- Estadística.* Estadística. (Washington, D.C.)
- Euclides (Groningen).* Euclides. Maandblad voor de Didactiek van de Wijskunde. (Groningen)
- Fac. Ingen. Agrimensa. Montevideo Publ. Didact. Inst. Mat. Estadist.* Facultad de Ingeniería y Agrimensura. Montevideo. Publicaciones Didácticas del Instituto de Matemática y Estadística. (Montevideo)
- Fac. Sci. Univ. Skopje Annuaire.* Faculté des Sciences de l'Université de Skopje. Annuaire. (Skopje)
- Fergan. Gos. Ped. Inst. Učen. Zap.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovanija Uzbekakoí SSR. Ferganskii Gosudarstvennyi Pedagogičeskii Institut imeni Ulugbeka. Učenyje Zapiski. Serija Matematičeskaja. (Fergana)
- Fibonacci Quart.* The Fibonacci Quarterly. Official Organ of the Fibonacci Association. A journal devoted to the study of integers with special properties. (St. Mary's College, Calif.)
- Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* B'lgarska Akademija na Naukite Fizičeskii Institut. Matematičeskii Institut. Fiziko-Matematičesko Spisanie. (Sofia)
- FOA Rep.* FOA Reports. Försvarets Forskningsanstalt (Research Institute of National Defence). (Stockholm)
- Formosan Sci.* Formosan Science. (Taipei)
- Fortschr. Physik.* Fortschritte der Physik. (Berlin)
- Found. Language.* International Journal of Language and Philosophy. Foundations of Language. (Dordrecht)
- Functional Anal. Appl.* Functional Analysis and its Applications. (A translation of *Funkcional. Anal. i Priložen.*) (New York)
- Fund. Math.* Polska Akademia Nauk. Fundamenta Mathematicae. (Warsaw)
- Funkcial. Ekvac.* Fako de l'Funkcialaj Ekvacioj Japana Matematika Societo. Funkcialaj Ekvacioj. (Serio Internacia). (Kobe)
- Funkcional. Anal. i Priložen.* Akademija Nauk SSSR. Funkcional'nyi Analiz i ego Priloženija. (Moscow) (Translated as: *Functional Anal. Appl.*)
- Fyz. Časopis Sloven. Akad. Vied.* Fyzikálny Časopis Slovenskej Akadémie Vied. (Bratislava)
- Gac. Mat. (Madrid).* Gaceta Matemática. (Madrid)
- Ganita.* Ganita (Mathematics). Bharat Ganita Parishad (Benares Mathematical Society). (Lucknow)
- Gaz. Mat. (Lisboa).* Gazeta de Matemática. (Lisbon)
- Gaz. Mat. Ser. A.* Societatea de Științe Matematice din R. P. R. Gazeta Matematică. Publicație Pentru Studiul și Răspîndirea Științelor Matematice. Seria A. (Bucharest)
- Geodæt. Inst. Medd.* Geodætisk Institut. Meddelelse. (Copenhagen)
- Gidrodinam. i Teor. Uprugosti.* Gidrodinamika i Teoriya Uprugosti. (Kharkov)
- Giorn. Ist. Ital. Attuari.* Giornale dell'Istituto Italiano degli Attuari. (Rome)
- Giorn. Mat. Battaglini.* Giornale di Matematiche di Battaglini. (Naples)
- Glasgow Math. J.* Glasgow Mathematical Journal. (Glasgow)
- Glasnik Mat. Ser. III.* Društvo Matematičara i Fizičara S. R. Hrvatske. Glasnik Matematički. Serija III. (Zagreb)
- Godišnik Visš. Tehn. Učebn. Zaved. Fiz.* Godišnik na Visšite Tehničeski Učebni Zavedenija. Fizika. (Sofia)
- Godišnik Visš. Tehn. Učebn. Zaved. Mat.* Godišnik na Visšite Tehničeski Učebni Zavedenija. Matematika. (Sofia)
- Godišnik Visš. Tehn. Učebn. Zaved. Priložna Meh.* Godišnik na Visšite Tehničeski Učebni Zavedenija. Priložna Mehanika. (Sofia)
- Gor'kov. Gos. Univ. Učen. Zap.* Gor'kovskii Gosudarstvennyi Universitet. Učenyje Zapiski. (Gorki)
- Gruzin. Politehn. Inst. Trudy.* Gruzinskii Politehničeskii Institut im. V. I. Lenina. Trudy. (Tbilisi) See *V. I. Lenin. Sakharh. Politekh. Inst. Šrom.*
- Helv. Phys. Acta.* Helvetica Physica Acta. Societatis Physicæ Helveticae Commentaria Publica. (Basel)
- Hist. of Sci.* History of Science. An Annual Review of Literature, Research, and Teaching. (Cambridge, England)
- Hitotsubashi J. Arts Sci.* Hitotsubashi Journal of Arts & Sciences, Hitotsubashi University. (Tokyo)
- IBM J. Res. Develop.* IBM Journal of Research and Development. (New York)
- IBM Systems J.* International Business Machines Corporation. IBM Systems Journal. (Armonk, N.Y.)
- Icarus.* Icarus. International Journal of the Solar System. (New York)
- IEEE Trans. Aerospace and Electron. Systems.* IEEE Transactions on Aerospace and Electronic Systems. (New York)

ABBREVIATIONS OF NAMES OF JOURNALS

- IEEE Trans. Antennas and Propagation.* IEEE Transactions on Antennas and Propagation. (New York)
- IEEE Trans. Automatic Control.* IEEE Transactions on Automatic Control. (New York)
- IEEE Trans. Circuit Theory.* IEEE Transactions on Circuit Theory. (New York)
- IEEE Trans. Computers.* IEEE Transactions on Computers. (New York) (Formerly: *IEEE Trans. Electronic Computers*)
- IEEE Trans. Electronic Computers.* IEEE Transactions on Electronic Computers. (New York) (Continued as: *IEEE Trans. Computers*)
- IEEE Trans. Geosci. Electronics.* IEEE Transactions on Geoscience Electronics. (New York)
- IEEE Trans. Information Theory.* IEEE Transactions on Information Theory. (New York)
- Illinois J. Math.* Illinois Journal of Mathematics. (Urbana, Ill.)
- Indag. Math.* Indagationes Mathematicae. See *Nederl. Akad. Wetensch. Indag. Math.*
- Indian J. History Sci.* Indian Journal of History of Science. National Institute of Sciences of India. (New Delhi)
- Indian J. Math.* Indian Journal of Mathematics. (Allahabad)
- Indian J. Mech. Math.* Indian Journal of Mechanics and Mathematics. (Calcutta)
- Indust. Math.* Industrial Mathematics. (Detroit, Mich.)
- Information and Control.* Information and Control. (New York)
- Information Processing in Japan.* Information Processing in Japan. (Tokyo)
- Information Sci.* Information Sciences. An International Journal. (New York)
- Inst. Gulbenkian Ci. Centro Cálculo Ci. Estud. Program. Anál. Numér.* Fundação Calouste Gulbenkian. Instituto Gulbenkian de Ciência. Centro de Cálculo Científico. Estudos de Programação e Análise Numérica. (Lisbon)
- Inst. Hautes Études Sci. Publ. Math.* Institut des Hautes Études Scientifiques. Publications Mathématiques. (Paris)
- Internat. J. Comput. Math.* International Journal of Computer Mathematics. (New York)
- Internat. J. Control.* International Journal of Control. (London)
- Internat. J. Engrg. Sci.* International Journal of Engineering Science. (Oxford-New York)
- Internat. J. Non-Linear Mech.* International Journal of Non-Linear Mechanics. (New York)
- Internat. J. Theoret. Phys.* International Journal of Theoretical Physics. (London)
- Invent. Math.* Inventiones Mathematicae. (Berlin)
- Inf.-Stroitel. Inst. Kulbyšev. Sb. Trudov.* Moskovskii Ordena Trudovogo Krasnogo Znameni Inženerno-Stroitel'nyi Institut im. V. V. Kulbyševa. Sbornik Trudov. (Moscow)
- Isis.* Isis. An International Review Devoted to the History of Science and Civilization. (Cambridge, Mass.)
- Israel J. Math.* Israel Journal of Mathematics. (Jerusalem)
- Ist. Lombardo Accad. Sci. Lett. Rend. A.* Istituto Lombardo. Accademia di Scienze e Lettere. Rendiconti. Scienze Matematiche, Fisiche, Chimiche e Geologiche. A. (Milan)
- Ist. Veneto Sci. Lett. Arti Atti Cl. Sci. Mat. Natur.* Istituto Veneto de Scienze, Lettere ed Arti. Venezia. Atti. Classe de Scienze Matematiche e Naturali. (Venice)
- Istanbul Tek. Üniv. Bül.* İstanbul Teknik Üniversitesi Bülteni. Bulletin of the Technical University of Istanbul. (Istanbul)
- Istanbul Üniv. Fen Fak. Mec. Ser. A.* İstanbul Üniversitesi Fen Fakültesi Mecmuası. A Serisi: Sırf ve Tatbiki Matematik. Revue de la Faculté des Sciences de l'Université d'Istanbul. Série A: Mathématiques Pures et Appliquées. (Istanbul)
- Istor.-Astronom. Issled.* Istoriko-Astronomičeskie Issledovanija. (Moscow)
- Istor.-Mat. Issled.* Istoriko-Matematičeskie Issledovanija. (Moscow-Leningrad)
- Ivanov. Gos. Ped. Inst. Učen. Zap.* Ministerstvo Prosvetšeniya RSFSR. Ivanovskii Gosudarstvennyi Pedagogičeskii Institut im. D. A. Furmanova. Ivanovskoe Matematičeskoe Obščestvo. Učenyje Zapiski. (Ivanovo)
- Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* Izvestiya Academy of Sciences USSR. Atmospheric and Oceanic Physics. (Washington, D.C.) (Translation of *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana*)
- Izv. Acad. Sci. USSR Phys. Solid Earth.* Izvestiya Academy of Sciences USSR. Physics of the Solid Earth. (Washington, D.C.) (Translation of *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli*)
- Izv. Akad. Nauk Armjan. SSR Ser. Fiz.* Izvestiya Akademii Nauk Armjanakol SSR. Seriya Fizika. (Erevan)
- Izv. Akad. Nauk Armjan. SSR Ser. Mat.* Izvestiya Akademii Nauk Armjanakol SSR. Seriya Matematika. (Erevan)
- Izv. Akad. Nauk Armjan. SSR Ser. Meh.* Izvestiya Akademii Nauk Armjanakol SSR. Seriya Mehanika. (Erevan)
- Izv. Akad. Nauk Azerbaidžan. SSR Ser. Fiz.-Tehn. Mat. Nauk.* Izvestiya Akademii Nauk Azerbaidžanskol SSR. Seriya Fiziko-Tehničeskikh i Matematičeskikh Nauk. (Baku)
- Izv. Akad. Nauk Kazah. SSR Ser. Fiz.-Mat.* Izvestiya Akademii Nauk Kazahakol SSR. Seriya Fiziko-Matematičeskaja. (Alma-Ata) (Formerly: *Izv. Akad. Nauk Kazah. SSR Ser. Fiz.-Mat. Nauk*)
- Izv. Akad. Nauk Kazah. SSR Ser. Fiz.-Mat. Nauk.* Izvestiya Akademii Nauk Kazahakol SSR. Seriya Fiziko-Matematičeskaja Nauk. (Alma-Ata) (Continued as: *Izv. Akad. Nauk Kazah. SSR Ser. Fiz.-Mat.*)
- Izv. Akad. Nauk Kirgiz. SSR.* Izvestiya Akademii Nauk Kirgizakol SSR. (Frunze)
- Izv. Akad. Nauk Moldav. SSR = Bul. Akad. Științe RSS Moldoven.*
- Izv. Akad. Nauk SSSR Ser. Fiz. Atmosfer. i Okeana.* Izvestiya Akademii Nauk SSSR. Seriya Fizika Atmosfery i Okeana. (Moscow) (Translated as: *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.*)
- Izv. Akad. Nauk SSSR Ser. Fiz. Zemli.* Izvestiya Akademii Nauk SSSR Seriya Fizika Zemli. (Moscow) (Translated as: *Izv. Acad. Sci. USSR Phys. Solid Earth*)
- Izv. Akad. Nauk SSSR Ser. Mat.* Izvestiya Akademii Nauk SSSR. Seriya Matematičeskaja. (Moscow) (Translated as: *Math. USSR-Izv.*)
- Izv. Akad. Nauk SSSR Ser. Meh. Židk. Gaza.* Akademija Nauk SSSR. Izvestiya Akademii Nauk SSSR. Seriya Mehanika Židkosti i Gaza. (Moscow)
- Izv. Akad. Nauk SSSR Tehn. Kibernet.* Izvestiya Akademii Nauk SSSR. Tehničeskaja Kibernetika. (Moscow) (Translated as: *Engrg. Cybernetics*)
- Izv. Akad. Nauk Tadžik. SSR Otdel. Fiz.-Mat. i Geolog.-Him. Nauk.* Izvestiya Akademii Nauk Tadžikakol SSR. Otdelenie Fiziko-Matematičeskikh i Geologo-Himičeskikh Nauk. (Dushanbe) (Formerly: *Izv. Akad. Nauk Tadžik. SSR Otdel. Fiz.-Tehn. i Him. Nauk*)
- Izv. Akad. Nauk Tadžik. SSR Otdel. Fiz.-Tehn. i Him. Nauk.* Izvestiya Akademii Nauk Tadžikakol SSR. Otdelenie Fiziko-Tehničeskikh i Himičeskikh Nauk. (Dushanbe) (Continued as: *Izv. Akad. Nauk Tadžik. SSR Otdel. Fiz.-Mat. i Geolog.-Him. Nauk*)
- Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tehn. Him. Geol. Nauk.* Izvestiya Akademii Nauk Turkmenakol SSR. Seriya Fiziko-Tehničeskikh, Himičeskikh i Geologičeskikh Nauk. (Ashkhabad)
- Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk.* Izvestiya Akademii Nauk UzSSR. Seriya Fiziko-Matematičeskikh Nauk. UzSSR Fanlar Akademijasining Ahboroti. Fizika-Matematika Fanlarj Serijasi. (Tashkent)
- Izv. Kazan. Fil. Akad. Nauk SSSR Ser. Fiz.-Mat. i Tehn. Nauk.* Izvestiya Kazanskogo Filiala Akademii Nauk SSSR. Seriya Fiziko-Matematičeskikh i Tehničeskikh Nauk. (Kazan)
- Izv. Krymk. Ped. Inst.* Izvestiya Krymskogo Pedagogičeskogo Instituta im. M. V. Frunze. (Simferopol)
- Izv. Sibirk. Old. Akad. Nauk SSSR.* Izvestiya Sibirskogo Otdelenija Akademija Nauk SSSR. (Novosibirsk)
- Izv. Vuzov = Izv. Vyš. Učebn. Zaved. Matematika.*

ABBREVIATIONS OF NAMES OF JOURNALS

- Izv. Vysš. Učebn. Zaved. Aviacion. Tehn.* Ministerstvo Vyššego i Srednego Special'nogo Obrazovanija SSSR. Izvestija Vyšših Učebnyh Zavedenij. Aviacionnaja Tehnika. (Kazan)
- Izv. Vysš. Učebn. Zaved. Elektromehanika.* Ministerstvo Vyššego i Srednego Special'nogo Obrazovanija SSSR. Izvestija Vyšših Učebnyh Zavedenij. Elektromehanika. (Novocherkassk)
- Izv. Vysš. Učebn. Zaved. Fizika.* Ministerstvo Vyššego i Srednego Special'nogo Obrazovanija SSSR. Izvestija Vyšših Učebnyh Zavedenij. Fizika. (Tomak) (Translated as: *Soviet Physics J.*)
- Izv. Vysš. Učebn. Zaved. Matematika.* Ministerstvo Vyššego Obrazovanija SSSR. Izvestija Vyšših Učebnyh Zavedenij. Matematika. (Kazan)
- Izv. Vysš. Učebn. Zaved. Radiofizika.* Ministerstvo Vyššego i Srednego Special'nogo Obrazovanija SSSR. Izvestija Vyšših Učebnyh Zavedenij. Radiofizika. (Gorki) (Translated as: *Radiophys. and Quantum Electronics*)
- J. Algebra.* Journal of Algebra. (New York)
- J. Amer. Statist. Assoc.* Journal of the American Statistical Association. (Washington, D.C.)
- J. Analyse Math.* Journal d'Analyse Mathématique. (Jerusalem)
- J. Annamalai Univ. Part B Sci.* Journal of the Annamalai University. Part B. Sciences. (Annamalainagar)
- J. Appl. Math. Mech.* Journal of Applied Mathematics and Mechanics. (Translation of the Soviet journal *Prikladnaja Matematika i Mehanika*). (New York) (Translation of *Prikl. Mat. Meh.*)
- J. Appl. Mech. Tech. Phys.* Journal of Applied Mechanics and Technical Physics. (Translation of *Ž. Prikl. Meh. i Tehn. Fiz.*) (New York)
- J. Appl. Probability.* Journal of Applied Probability. (East Lansing, Mich.)
- J. Approximation Theory.* Journal of Approximation Theory. (New York)
- J. Assoc. Comput. Mach.* Journal of the Association for Computing Machinery. (New York)
- J. Astronaut. Sci.* American Astronautical Society. Journal of the Astronautical Sciences. (Baltimore, Md.)
- J. Atmospheric Sci.* Journal of the Atmospheric Sciences. (Boston, Mass.)
- J. Austral. Math. Soc.* The Journal of the Australian Mathematical Society. (Sydney)
- J. Birla Inst. Tech. and Sci. (Pilani).* Journal of the Birla Institute of Technology and Science. (Pilani)
- J. Chem. Phys.* The Journal of Chemical Physics. (New York)
- J. China Univ. Sci. Techn.* Journal of the China University of Science and Technology. Zhongguo Kexue Jishu Daxue Xuebao. (Peking)
- J. College Arts Sci. Chiba Univ.* Journal of the College of Arts and Sciences, Chiba University. (Chiba)
- J. Combinatorial Theory.* Journal of Combinatorial Theory. (New York)
- J. Comput. System Sci.* Journal of Computer and System Sciences. (New York)
- J. Computational Phys.* Journal of Computational Physics. (New York)
- J. Cuneiform Studies.* Journal of Cuneiform Studies. (New Haven, Conn.)
- J. Differential Equations.* Journal of Differential Equations. (New York)
- J. Differential Geometry.* Journal of Differential Geometry. (Bethlehem, Pa.)
- J. Engrg. Math.* Journal of Engineering Mathematics. (Groningen)
- J. Fac. Engrg. Chiba Univ.* Journal of the Faculty of Engineering, Chiba University. (Chiba)
- J. Fac. Engrg. Univ. Tokyo Ser. B.* Journal of the Faculty of Engineering, University of Tokyo. Series B. (Tokyo)
- J. Fac. Sci. Hokkaido Univ. Ser. I.* Journal of the Faculty of Science, Hokkaido University. Series I. Mathematics. (Sapporo)
- J. Fac. Sci. Shinshu Univ.* Journal of the Faculty of Science. Shinshu University. (Matsumoto)
- J. Fac. Sci. Univ. Tokyo Sect. I.* Journal of the Faculty of Science, University of Tokyo. Section I. Mathematics, Astronomy, Physics, Chemistry. (Tokyo)
- J. Fluid Mech.* Journal of Fluid Mechanics. (London)
- J. Franklin Inst.* Journal of the Franklin Institute. (Philadelphia, Pa.)
- J. Functional Analysis.* Journal of Functional Analysis. (New York)
- J. Gakugei Tokushima Univ.* Journal of Gakugei. Tokushima University. (Tokushima) (Continued as: *J. Math. Tokushima Univ.*)
- J. Indian Math. Soc.* The Journal of the Indian Mathematical Society. (Madras)
- J. Indian Statist. Assoc.* Journal of the Indian Statistical Association. (Bombay)
- J. Inst. Math. Appl.* Journal of the Institute of Mathematics and its Applications. (New York)
- J. Karnatak Univ. Sci.* Journal of the Karnatak University. Science. (Dharwar)
- J. London Math. Soc.* The Journal of the London Mathematical Society. (London)
- J. Madras Univ. B.* Journal of the Madras University. B. Contributions in Mathematics, Physical and Biological Sciences. (Madras)
- J. Math. Anal. Appl.* Journal of Mathematical Analysis and Applications. (New York)
- J. Math. and Phys.* Journal of Mathematics and Physics. (Cambridge, Mass.) (Continued as: *Studies in Appl. Math.*)
- J. Math. (Jabalpur).* Journal of Mathematics. (Jabalpur)
- J. Math. Kyoto Univ.* Journal of Mathematics of Kyoto University. (Kyoto)
- J. Math. Mech.* Journal of Mathematics and Mechanics. (Bloomington, Ind.)
- J. Math. Pures Appl.* Journal de Mathématiques Pures et Appliquées. (Paris)
- J. Math. Sci.* Journal of Mathematical Sciences. The Society of Mathematical Sciences. (Delhi)
- J. Math. Soc. Japan.* Journal of the Mathematical Society of Japan. (Tokyo)
- J. Math. Tokushima Univ.* Journal of Mathematics, Tokushima University. (Tokushima) (Formerly: *J. Gakugei Tokushima Univ.*)
- J. Mathematical and Physical Sci.* Journal of Mathematical and Physical Sciences. (Madras)
- J. Mathematical Phys.* Journal of Mathematical Physics. (New York)
- J. Mathematical Psychology.* Journal of Mathematical Psychology. (New York)
- J. Mécanique.* Journal de Mécanique. (Paris)
- J. Mech. Phys. Solids.* Journal of the Mechanics and Physics of Solids. (London)
- J. Nanyang Univ.* Journal of Nanyang University. (Singapore)
- J. Natur. Sci. and Math.* The Journal of Natural Sciences and Mathematics. (Lahore)
- J. Number Theory.* Journal of Number Theory. (New York)
- J. of M.A.C.T.* Journal of the Maulana Azad College of Technology. (Bhopal)
- J. Operations Res. Soc. Japan.* Journal of the Operations Research Society of Japan. (Tokyo)
- J. Opt. Soc. Amer.* Journal of the Optical Society of America. (New York)
- J. Optimization Theory Appl.* Journal of Optimization Theory and Applications. (New York)
- J. Phys. Soc. Japan.* Journal of the Physical Society of Japan. (Tokyo)

- J. Reine Angew. Math.* Journal für die reine und angewandte Mathematik. (Berlin)
- J. Res. Nat. Bur. Standards Sect. B.* Journal of Research of the National Bureau of Standards. Section B. Mathematics and Mathematical Physics. (Washington, D.C.)
- J. Roy. Statist. Soc. Ser. A.* Journal of the Royal Statistical Society. Series A (General). (London)
- J. Roy. Statist. Soc. Ser. B.* Journal of the Royal Statistical Society. Series B (Methodological). (London)
- J. Roy. Statist. Soc. Ser. C Appl. Statist.* Journal of the Royal Statistical Society. Series C. Applied Statistics. (London) (Formerly: *Appl. Statist.*)
- J. Sci. Engrg. Res.* Journal of Science and Engineering Research. (Kharagpur)
- J. Sci. Hiroshima Univ. Ser. A-I Math.* Journal of Science of the Hiroshima University. Series A-I (Mathematics). (Hiroshima)
- J. Sci. Res. Banaras Hindu Univ.* The Journal of Scientific Research of the Banaras Hindu University. (Banaras)
- J. Statist. Phys.* Journal of Statistical Physics. (New York)
- J. Symbolic Logic.* The Journal of Symbolic Logic. (Providence, R.I.)
- J. Theoret. Biol.* Journal of Theoretical Biology. (London)
- J. Tsing Hua Univ.* Journal of Tsing Hua University. (Peking)
- J. Univ. Bombay.* Journal of the University of Bombay. (Bombay)
- Jadernaja Fiz. Akademiya Nauk SSSR.* Jadernaja Fizika. (Moscow) (Translated as: *Soviet J. Nuclear Phys.*)
- Janus.* Janus. Revue Internationale de l'Histoire des Sciences, de la Médecine, de la Pharmacie et de la Technique. (Leiden)
- Japan. J. Math.* Science Council of Japan. Japanese Journal of Mathematics. (Tokyo)
- Jaroslav. Gos. Ped. Inst. Dokl. Naučn. Konfer.* Jaroslavskij Gosudarstvennyj Pedagogičeskij Institut. Doklady na Naučnyh Konferencijah. (Jaroslavl)
- Jber. Deutsch. Math.-Verein.* Jahresbericht der Deutschen Mathematiker-Vereinigung. (Stuttgart)
- Kabardino-Balkarsk. Gos. Univ. Učen. Zap.* Kabardino-Balkarskij Gosudarstvennyj Universitet. Učenyj Zapiski. (Formerly: *Kabardino-Balkarsk. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat.*)
- Kabardino-Balkarsk. Gos. Univ. Učen. Zap. Ser. Fiz.-Mat.* Kabardino-Balkarskij Gosudarstvennyj Universitet. Učenyje Zapiski. (Nalchik) (Continued as: *Kabardino-Balkarsk. Gos. Univ. Učen. Zap.*)
- Kalinin. Gos. Ped. Inst. Učen. Zap.* Kalininskij Gosudarstvennyj Pedagogičeskij Institut im. M. I. Kalinina. Učenyje Zapiski. (Kalinin)
- Kaliningrad. Gos. Ped. Inst. Učen. Zap.* Kaliningradskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Kaliningrad)
- Karachi Math. Assoc. Riazi (Souvenir).* Riazi. Souvenir of the Karachi Mathematics Association. (Karachi)
- Kazañ. Gos. Ped. Inst. Učen. Zap.* Kazanskij Gosudarstvennyj Pedagogičeskij Institut im. Abaja. Učenyje Zapiski. (Alma-Ata)
- Kazan. Gos. Univ. Učen. Zap.* Kazanskij Ordena Trudovogo Krasnogo Znamenij Gosudarstvennyj Universitet im. V. I. Ul'janova-Lenina. Učenyje Zapiski. (Kazan)
- Keiei-Kagaku.* Keiei-Kagaku (Management Science). Japanese Operations Research Association. (Tokyo)
- Kemerov. Gos. Ped. Inst. Učen. Zap.* Kemerovskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Kemerovo)
- Kexue Tongbao.* Chinese Academy of Science. Kexue Tongbao (Science Bulletin). (Peking)
- Kexue Tongbao (Foreign Lang. Ed.).* Academia Sinica. Kexue Tongbao (Science Bulletin) (Foreign Language Edition). (Peking)
- Kibernetika (Kiev).* Otdelenie Matematiki, Mehaniki i Kibernetiki Akademii Nauk Ukrainkoj SSR. Kibernetika. (Kiev) (Translated as: *Cybernetica*)
- Kirov. Gos. Ped. Inst. Učen. Zap.* Kirovskij Gosudarstvennyj Pedagogičeskij Institut imeni V. I. Lenina. Učenyje Zapiski. (Yoshkar-Ola)
- Kiřinev. Gos. Univ. Učen. Zap.* Ministerstvo Narodnogo Obrazovanija Moldavskoj SSR. Kiřinevskij Gosudarstvennyj Universitet. Učenyje Zapiski. (Kiřinev)
- Knižnice Odborn. Věd. Spisť Vysoké. Učeni Tech. v Brně.* Knižnice Odborných a Vědeckých Spisť Vysokého Učeni Technického v Brně. Vysoké Učeni Technické v Brně. (Brno)
- Kōdai Math. Sem. Rep.* Kōdai Mathematical Seminar Reports. (Tokyo)
- Kolomen. Ped. Inst. Učen. Zap.* Ministerstvo Prosvěšćenija RSFSR. Kolomenskij Pedagogičeskij Institut. Učenyje Zapiski. (Kolomna)
- Kostrom. Gos. Ped. Inst. Učen. Zap.* Kostromskoj Gosudarstvennyj Pedagogičeskij Institut Imeni N. A. Nekrasova. Učenyje Zapiski. (Jaroslavl)
- Krasnodar. Gos. Ped. Inst. Naučn. Trudy.* Krasnodarskij Gosudarstvennyj Pedagogičeskij Institut. Naučnye Trudy. (Krasnodar)
- Kulbyšev. Gos. Ped. Inst. Učen. Zap.* Ministerstvo Prosvěšćenija RSFSR. Kulbyševskij Gosudarstvennyj Pedagogičeskij Institut imeni V. V. Kulbyšova. Učenyje Zapiski. (Kuybyshev)
- Kumamoto J. Sci. Ser. A.* Kumamoto Journal of Science. Series A (Mathematics, Physics and Chemistry). (Kumamoto)
- Kybernetika (Prague).* Kybernetika. (Prague)
- Kyungpook Math. J.* Kyungpook National University. Kyungpook Mathematical Journal. (Taegu)
- Labdev—J. Sci. Tech. Part A.* Labdev. Journal of Science and Technology. Part A—Physical Sciences. (Kanpur)
- Latvijas PSR Zinātņu Akad. Vēstis.* Latvijas PSR Zinātņu Akadēmijas Vēstis. Izvestija Akademii Nauk Latvijas SSR. (Riga)
- Latvijas PSR Zinātņu Akad. Vēstis Fiz. Tehn. Zinātņu Sēr.* Latvijas PSR Zinātņu Akadēmijas Vēstis. Fizikas un Tehnisko Zinātņu Sērija. Izvestija Akademii Nauk Latvijas SSR. Sērija Fizičeskij i Tehničeskij Nauk. (Riga)
- Latvijas Valsts Univ. Zinātņ. Raksti.* PSRS Augstākās Izglītības Ministrija. Pētera Stučkas Latvijas Valsts Universitāte. Zinātniskie Raksti. Ministerstvo Vysshego Obrazovanija. Latvijas Gosudarstvennyj Universitet im. Petra Stučki. Učenyje Zapiski. (Riga)
- Leninabad. Gos. Ped. Inst. Učen. Zap.* Leninabadskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Dushanbe)
- Leningrad. Gos. Ped. Inst. Učen. Zap.* Leningradskij Gosudarstvennyj Pedagogičeskij Institut im. A. I. Gercena. Učenyje Zapiski. (Leningrad)
- Leningrad. Gos. Univ. Učen. Zap. Ser. Mat. Nauk.* Leningradskij Gosudarstvennyj Ordena Lenina Universitet imeni. A. A. Ždanova. Učenyje Zapiski. Sērija Matematičeskij Nauk. (Leningrad)
- Leningrad. Inf.-Ėkonom. Inst. Trudy.* Leningradskij Inženerno-Ėkonomičeskij Institut imeni Pal'miro Tol'jatti. Trudy. (Leningrad)
- Leningrad. Meh. Inst. Sb. Naučn. Trudov.* Leningradskij Mehaničeskij Institut. Sbornik Naučnyh Trudov (LMI). (Leningrad)
- Leningrad. Politehn. Inst. Trudy.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovanija RSFSR. Leningradskij Politehničeskij Institut im. M. I. Kalinina. Trudy LPI. (Leningrad)
- Let. Nuovo Cimento.* Lettere al Nuovo Cimento. Rivista Internazionale della Società Italiana di Fisica. (Bologna)
- Linear Algebra and Appl.* Linear Algebra and its Applications. (New York)
- Litovsk. Fiz. Sb.* Lietuvos TSR Mokslų Akademija. Lietuvos TSR Aukštojos Mokyklos. Lietuvos Fizikos Rinkiny. Akademija Nauk Litovskoj SSR. Vyskie Školy Litovskoj SSR. Litovskij Fizičeskij Sbornik. (Vilnius)

ABBREVIATIONS OF NAMES OF JOURNALS

- Litovsk. Mat. Sb.* Lietuvos TSR Mokslų Akademija. Lietuvos TSR Aukštojo Mokyklos. Lietuvos Matematikos Rinkiny. Akademija Nauk Litovskoi SSR. Vysšie Učebnye Zavedeniya Litovskoi SSR. Litovskii Matematicheskii Sbornik. (Vilnius)
- Logique et Analyse.* Logique et Analyse. (Louvain)
- Lucrări Ști. Inst. Ped. Galați.* Lucrări Științifice. Institutul Pedagogic Galați. (Galați)
- L'vov. Politehn. Inst. Naučn. Zap. Ser. Fiz.-Mat.* MVO USSR. L'vovskii Politehnicheskii Institut. Naučnye Zapiski. Seriya Fiziko-Matematicheskaya. (Lvov)
- Magnetohydrodynamics.* Magnetohydrodynamics. (A translation of *Magnitnaya Gidrodinamika* of the Academy of Sciences of the Latvian SSR). (New York) (Translation of *Magnit. Gidrodinamika*)
- Magnit. Gidrodinamika.* Akademija Nauk Latvskoi SSR. Magnitnaya Gidrodinamika. (Riga) (Translated as: *Magnetohydrodynamics*)
- Magyar Tud. Akad. Mat. Fiz. Ost. Kész.* A Magyar Tudományos Akadémia Matematikai és Fizikai Tudományok Osztályának Közleményei. (Budapest)
- Management Sci.* Management Science. Journal of the Institute of Management Science. (Philadelphia, Pa.)
- Manuscripta Math.* Manuscripta Mathematica. (Berlin)
- Mari. Gos. Ped. Inst. Učen. Zap.* Mariškii Gosudarstvennyi Pedagogicheskii Institut. Učeny Zapiski. (Ioshkar-Ola)
- Mat. Časopis Sloven. Akad. Vied.* Matematički Časopis Slovenske Akademije Vied. (Bratislava)
- Mat.-Fys. Medd. Danske Vid. Selsk.* Matematikfysiske Meddelelser udgivet af Det Kongelige Danske Videnskabernes Selskab. (Copenhagen)
- Mat.-Fys. Skr. Danske Vid. Selsk.* Matematikfysiske Skrifter udgivet af Det Kongelige Danske Videnskabernes Selskab. (Copenhagen)
- Mat. Issled.* Akademija Nauk Moldavskoi SSR. Institut Matematiki s Vyčislitel'nym Centrom. Matematicheskie Issledovaniya. (Kishinev)
- Mat. Lapok.* Matematikai Lapok. Bolyai János Matematikai Társulat. (Budapest)
- Mat. Sb.* Matematicheskii Sbornik. Novaya Seriya. (Moscow) (Translated as: *Math. USSR-Sb.*)
- Mat. Vesnik.* Društvo Matematičara, Fizičara i Astronoma SRS i Matematički Institut-Beograd. Matematički Vesnik. Nova Seriya. (Belgrade)
- Mat. Zametki.* Akademija Nauk Sojuza SSR. Matematicheskie Zametki. (Moscow) (Translated as: *Math. Notes*)
- Matematika (Catania).* Le Matematiche. (Catania)
- Matematika—Period. Sb. Perevodov Inostran. Statei.* Matematika. Periodicheskii Sbornik Perevodov Inostrannykh Statei. (Moscow)
- Math. Algorithms.* Massachusetts Institute of Technology. Mathematical Algorithms. (Cambridge, Mass.)
- Math. Ann.* Mathematische Annalen. (Berlin)
- Math. Biosci.* Mathematical Biosciences: An International Journal. (New York)
- Math. Centrum Amsterdam Afd. Toegepaste Wisk.* Mathematisch Centrum Amsterdam. Afdeling Toegepaste Wiskunde. (Amsterdam)
- Math. Centrum Amsterdam Afd. Zuivere Wisk.* Mathematisch Centrum Amsterdam. Afdeling Zuivere Wiskunde. (Amsterdam)
- Math. Centrum Amsterdam Rekenafdeling.* Mathematisch Centrum Amsterdam. Rekenafdeling. (Amsterdam)
- Math. Comp.* Mathematics of Computation. (Washington, D.C.)
- Math. Gaz.* The Mathematical Gazette. (London)
- Math. J. Okayama Univ.* Mathematical Journal of Okayama University. (Okayama)
- Math. Japon.* Mathematica Japonica. (Kobe)
- Math. Mag.* Mathematics Magazine. (Buffalo, N.Y.)
- Math. Nachr.* Mathematische Nachrichten. (Berlin)
- Math. Notas.* Mathematicas Notas. Boletín del Instituto de Matemática. (Rosario)
- Math. Notes.* Mathematical Notes of the Academy of Sciences of the USSR. (New York) (Translation of *Mat. Zametki*)
- Math.-Phys. Semesterber.* Mathematisch-Physikalische Semesterberichte. (Göttingen)
- Math. Rep. College General Ed. Kyushu Univ.* Mathematical Reports of College of General Education Kyushu University. (Fukuoka)
- Math. Reviews.* Mathematical Reviews. (Providence, R.I.) (Usually abbreviated as *MR* in the text of *Math. Reviews*)
- Math. Scand.* Mathematica Scandinavica. (Copenhagen)
- Math. Sci. Humaines.* Centre de Mathématique Sociale et de Statistique EPHE. Mathématiques et Sciences Humaines. (Paris)
- Math. Student.* The Mathematics Student. (Madras)
- Math. Systems Theory.* Mathematical Systems Theory. (New York)
- Math. und Wirtschaft.* Mathematik und Wirtschaft. (Berlin)
- Math. USSR-Izv.* Mathematics of the USSR-Izvestiya. (Providence, R.I.) (Translation of *Izv. Akad. Nauk SSSR Ser. Mat.*)
- Math. USSR-Sb.* Mathematics of the USSR-Sbornik. (Providence, R.I.) (Translation of *Mat. Sb.*)
- Math. Z.* Mathematische Zeitschrift. (Berlin)
- Mathematica (Cluj).* Societatea de Științe Matematice și Fizice din R.P.R. Filiala Cluj. Mathematica. (Cluj)
- Mathematika.* Mathematika. A Journal of Pure and Applied Mathematics. (London)
- Matrix Tensor Quart.* The Tensor Club of Great Britain. The Matrix and Tensor Quarterly. (London)
- Meccanica—J. Italian Assoc. Theoret. Appl. Mech.* Meccanica. Journal of the Italian Association of Theoretical and Applied Mechanics. (Milan)
- Mech. Teoret. Stos.* Polskie Towarzystwo Mechaniki Teoretycznej i Stosowanej. Mechanika Teoretyczna i Stosowana. (Warsaw)
- Med. Konink. Vlaamse Acad. Wetensch. Lett. Schone Kunst. België Kl. Wetensch.* Mededelingen van de Koninklijke Vlaamse Academie voor Wetenschappen, Letteren en Schone Kunsten van België. Klasse der Wetenschappen. (Brussels)
- Medd. Lunds Univ. Mat. Sem.* Meddelanden från Lunds Universitets Matematiska Seminarium. Communications du Séminaire Mathématique de l'Université de Lund. (Lund)
- Melekes. Gos. Ped. Inst. Učen. Zap.* Melekeskii Gosudarstvennyi Pedagogicheskii Institut. Učeny Zapiski. (Melekes)
- Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* Memorie dell'Accademia delle Scienze di Torino. Classe di Scienze Fisiche, Matematiche e Naturali. (Turin)
- Mem. Amer. Math. Soc.* Memoirs of the American Mathematical Society. (Providence, R.I.)
- Mem. Defense Acad.* Memoirs of the Defense Academy (Mathematics, Physics, Chemistry and Engineering) (Yokosuka)
- Mem. Ehime Univ. Sect. II Ser. A.* Memoirs of the Ehime University. Section II. Natural Science. Series A. (Matsuyama)
- Mem. Fac. Ci. Univ. Habana Ser. Mat.* Memorias de la Facultad de Ciencias. Universidad de la Habana. Serie Matemática. (Havana)
- Mem. Fac. Ed. Kumamoto Univ. Sect. 1.* Memoirs of the Faculty of Education. Kumamoto University. Section 1. (Natural Science). (Kumamoto)
- Mem. Fac. Engrg. Hiroshima Univ.* Memoirs of the Faculty of Engineering. Hiroshima University. (Hiroshima)
- Mem. Fac. Engrg. Kyoto Univ.* Memoirs of the Faculty of Engineering. Kyoto University. (Kyoto)
- Mem. Fac. Engrg. Miyazaki Univ.* Memoirs of the Faculty of Engineering. Miyazaki University. (Miyazaki)

ABBREVIATIONS OF NAMES OF JOURNALS

- Mem. Fac. Indust. Arts Kyoto Tech. Univ. Sci. and Tech.* Memoirs of the Faculty of Industrial Arts. Kyoto Technical University. Science and Technology. (Kyoto)
- Mem. Fac. Lit. Sci. Shimane Univ. Natur. Sci.* Memoirs of the Faculty of Literature and Science Shimane University Natural Sciences. (Matsue)
- Mem. Fac. Sci. Kyushu Univ. Ser. A.* Memoirs of the Faculty of Science. Kyushu University. Series A. Mathematics. (Fukuoka)
- Mem. Kitami Inst. Tech.* Memoirs of the Kitami Institute of Technology. (Kitami)
- Mem. Mat. Inst. "Jorge Juan".* Consejo Superior de Investigaciones Científicas. Memorias de Matemática del Instituto "Jorge Juan". (Madrid)
- Mem. Muroran Inst. Tech.* Memoirs of the Muroran Institute of Technology. (Murooran)
- Mem. Osaka Gakugei Univ. B Natur. Sci.* Memoirs of Osaka Gakugei University B. Natural Sciences. (Osaka) (Continued as: *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.*)
- Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* Memoirs of Osaka Kyoiku University. III. Natural Science and Applied Science. (Osaka) (Formerly: *Mem. Osaka Gakugei Univ. B Natur. Sci.*)
- Mem. Real Acad. Ci. Art. Barcelona.* Memorias de la Real Academia de Ciencias y Artes de Barcelona. (Barcelona)
- Mem. Real Acad. Ci. Exact. Fis. Natur. Madrid.* Memorias de la Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid. Serie de Ciencias Exactas. (Madrid)
- Mem. School Sci. Engrg. Waseda Univ. Tokyo.* Memoirs of the School of Science and Engineering. Waseda University, Tokyo. (Tokyo)
- Mem. Soc. Astronom. Ital.* Memorie della Società Astronomica Italiana. (Milan)
- Mém. Soc. Roy. Sci. Liège Coll. in-8°.* Mémoires de la Société Royale des Sciences de Liège. Collection in-8°. (Liège)
- Mémor. Sci. Math.* Mémorial des Sciences Mathématiques. (Paris)
- Mémor. Sci. Phys.* Mémorial des Sciences Physiques. (Paris)
- Metody Vyčisl. Leningradskij Ordena Lenina Gosudarstvennyj Universitet imeni A. A. Ždanova. Kafedra Vyčislitel'noj Matematiki i Vyčislitel'nyj Centr. Metody Vyčislenij.* (Leningrad)
- Metrika.* Metrika. (Würzburg)
- Metroecon.* Metroeconomica. Rivista Internazionale di Economica. (Bologna)
- Metron.* Metron. (Rome)
- Michigan Math. J.* The Michigan Mathematical Journal. (Ann Arbor, Mich.)
- Mind.* Mind. A Quarterly Review of Psychology and Philosophy. (Oxford, England)
- Mitt. Inst. Angew. Math. Zürich.* Mitteilungen aus dem Institut für angewandte Mathematik an der Eidgenössischen Technischen Hochschule in Zürich. (Zürich)
- Mitt. Math. Gesellsch. Hamburg.* Mitteilungen der mathematischen Gesellschaft in Hamburg. (Hamburg)
- Mitt. Math. Sem. Giessen.* Mitteilungen aus dem Mathematischen Seminar Giessen. (Giessen)
- Mitt. Verein. Schweiz. Versich.-Math.* Mitteilungen der Vereinigung Schweizerischer Versicherungsmathematiker. Bulletin de l'Association des Actuaires Suisses. (Bern)
- Molecular Phys.* Molecular Physics. (London)
- Monatsh. Deutsch. Akad. Wiss. Berlin.* Monatsberichte der Deutschen Akademie der Wissenschaften zu Berlin. (Berlin)
- Monatsh. Math.* Monatshefte für Mathematik. (Vienna)
- Moscow Univ. Bull. Ser. III Phys. Astronom.* Moscow University. Moscow University Bulletin. Series III. Physics and Astronomy. (Acton, Mass.) (Translation of *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.*)
- Moskov. Gos. Ped. Inst. Učen. Zap.* Moskovskij Gosudarstvennyj Pedagogičeskij Institut im. V. I. Lenina. Učenyje Zapiski. (Moscow)
- Moskov. Gos. Univ. Soobšč. Gos. Astronom. Inst. Šternberg.* Moskovskij Gosudarstvennyj Universitet im. M. V. Lomonosova. Soobščeniya Gosudarstvennogo Astronomičeskogo Instituta im. P. K. Šternberga. (Moscow)
- Moskov. Gos. Univ. Trudy Gos. Astronom. Inst. Šternberg.* Moskovskij Gosudarstvennyj Universitet im. M. V. Lomonosova. Trudy Gosudarstvennogo Astronomičeskogo Instituta im. P. K. Šternberga. (Moscow)
- Moskov. Gos. Univ. Voprosy Meh.* Moskovskij Gosudarstvennyj Universitet. Voprosy Mehaniki. (Moscow)
- Moskov. Inst. Inž. Železnodorozh. Transporta Trudy.* Moskovskij Institut Inženerov Železnodorozhnogo Transporta. Trudy. (Moscow)
- Moskov. Oblast. Ped. Inst. Učen. Zap.* Moskovskij Oblastnoj Pedagogičeskij Institut. Učenyje Zapiski. (Moscow)
- Moskov. Zaočn. Ped. Inst. Učen. Zap.* Moskovskij Zaočnyj Pedagogičeskij Institut. Učenyje Zapiski. (Moscow)
- MR.* Mathematical Reviews. (Providence, R.I.)
- Nachr. Akad. Wiss. Göttingen Math.-Phys. Kl. II.* Nachrichten der Akademie der Wissenschaften in Göttingen. II. Mathematisch-Physikalische Klasse. (Göttingen)
- Nagoya Math. J.* Nagoya Mathematical Journal. (Nagoya)
- Nanta Math.* Nanyang University. Nanta Mathematica. (Singapore)
- Natur. Sci. Rep. Ochanomizu Univ.* Natural Science Report of the Ochanomizu University. (Tokyo)
- Naval Res. Logist. Quart.* Naval Research Logistics Quarterly. (Washington, D.C.)
- NEC Res. Development.* NEC Research and Development (Technical Journal of Nippon Electric Co., Ltd.). (Tokyo)
- Nederl. Akad. Wetensch. Indag. Math.* Koninklijke Nederlandse Akademie van Wetenschappen. Indagationes Mathematicae ex Actis Quibus Titulus. Proceedings of the Section of Sciences. (Amsterdam) (Same as: *Nederl. Akad. Wetensch. Proc. Ser. A*)
- Nederl. Akad. Wetensch. Proc. Ser. A.* Koninklijke Nederlandse Akademie van Wetenschappen. Proceedings. Series A. Mathematical Sciences. (Amsterdam) (Same as: *Nederl. Akad. Wetensch. Indag. Math.*)
- Nederl. Akad. Wetensch. Proc. Ser. B.* Koninklijke Nederlandse Akademie van Wetenschappen. Proceedings. Series B. Physical Sciences. (Amsterdam)
- Nederl. Akad. Wetensch. Verslag Afd. Natuurk.* Koninklijke Nederlandse Akademie van Wetenschappen. Verslag van de Gewone Vergadering van de Afdeling Natuurkunde. (Amsterdam)
- Nieuw Arch. Wisk.* Nieuw Archief voor Wiskunde. (Groningen)
- Nigerian J. Sci.* University of Ibadan. Nigerian Journal of Science. (Ibadan)
- Nordisk Mat. Tidskr.* Nordisk Matematisk Tidsskrift. (Oslo)
- Nordisk Tidskr. Informationsbehandling (BIT).* Nordisk Tidsskrift for Informationsbehandling. (Copenhagen)
- Norske Vid. Selsk. Forh. (Trondheim).* Det Kongelige Norske Videnskabs Selskabs Forhandlinger. (Trondheim)
- Norske Vid. Selsk. Skr. (Trondheim).* Det Kongelige Norske Videnskabs Selskabs Skrifter. (Trondheim)
- Notas Mat.* Notas de Matemática. (Rio de Janeiro)
- Notices Amer. Math. Soc.* Notices of the American Mathematical Society. (Providence, R.I.)
- Notre Dame J. Formal Logic.* Notre Dame Journal of Formal Logic. (Notre Dame, Ind.)

ABBREVIATIONS OF NAMES OF JOURNALS

Nova Acta Leopoldina (N.F.). Nova Acta Leopoldina. Abhandlungen der Deutschen Akademie der Naturforscher Leopoldina. Neue Folge. (Leipzig) (Formerly: *Deutsch. Akad. Naturforsch. Nova Acta Leopoldina N.F.*)

Novgorod. Golovn. Gos. Ped. Inst. Učen. Zap. Novgorodskii Golovnoi Gosudarstvennyi Pedagogičeskii Institut. Učeny Zapiski. (Novgorod)

NTM Schr. Geschichte Naturwiss. Tech. Medizin. NTM Schriftenreihe für Geschichte der Naturwissenschaften Technik und Medizin. (Leipzig)

Numer. Math. Numerische Mathematik. (Berlin)

Nuovo Cimento A. Il Nuovo Cimento A. (Bologna)

Nuovo Cimento B. Il Nuovo Cimento B. (Bologna)

Obzornik Mat. Fiz. Društvo Matematikov, Fizikov in Astronomov SRS. Obzornik za Matematiko in Fiziko. (Ljubljana)

Odess. Gos. Univ. Naučn. Ežegodnik. Ministerstvo Vyšego i Srednego Special'nogo Obrazovanija USSR. Odeskii Gosudarstvennyi Universitet. Naučnyi Ežegodnik. (Odessa)

Operations Res. Operations Research. The Journal of the Operations Research Society of America. (Baltimore, Md.) (Sometimes abbreviated as *OR* in *Math. Reviews*)

Optica Acta. Optica Acta. (London)

Optimal. Planirovanie. Optimal'noe Planirovanie. Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Matematiki. (Novosibirsk)

Orehovo-Zuev. Ped. Inst. Učen. Zap. Kaf. Mat. Ministerstvo Prosveščeniya RSFSR. Orekhovo-Zuevskii Pedagogičeskii Institut. Učeny Zapiski Kafedry Matematiki. (Moscow)

Orenburg. Gos. Ped. Inst. Učen. Zap. Orenburgskii Gosudarstvennyi Pedagogičeskii Institut im. V. P. Čkalova. Učeny Zapiski. (Chelyabinsk)

Orlov. Gos. Ped. Inst. Učen. Zap. Orlovskii Gosudarstvennyi Pedagogičeskii Institut. Učeny Zapiski. (Orl)

Osaka J. Math. Osaka Journal of Mathematics. (Osaka)

Österreich. Akad. Wiss. Math.-Natur. Kl. S.-B. II. Österreichische Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse. Sitzungsberichte. Abteilung II. Mathematik, Astronomie, Physik, Meteorologie und Technik. (Vienna)

P.A. Science Abstracts. Physics Abstracts. (London)

Pacific J. Math. Pacific Journal of Mathematics. (Berkeley, Calif.)

Panjab Univ. J. Math. (Lahore). Panjab University Journal of Mathematics. (Lahore)

Papers and Proc. Roy. Soc. Tasmania. Papers and Proceedings of the Royal Society of Tasmania. (Hobart)

Penz. Politehn. Inst. Učen. Zap. Mat. Meh. Penzenskii Politehničeskii Institut. Matematika i Mehanika. Učeny Zapiski. (Penza)

Period. Mat. Periodico di Matematiche. (Bologna)

Perm. Gos. Ped. Inst. Učen. Zap. Permskii Gosudarstvennyi Pedagogičeskii Institut. Učeny Zapiski. (Perm)

Perm. Gos. Univ. Učen. Zap. Permskii Gosudarstvennyi Universitet imeni A. M. Gor'kogo. Učeny Zapiski. (Perm)

Perm. Politehn. Inst. Sb. Naučn. Trudov. Permskii Politehničeskii Institut. Sbornik Naučnyh Trudov. (Perm)

Philos. Sci. Philosophy of Science. (Baltimore, Md.)

Philos. Trans. Roy. Soc. London Ser. A. Philosophical Transactions of the Royal Society of London. Series A. Mathematical and Physical Sciences. (London)

Phys. Fluida. The Physics of Fluids. (New York)

Phys. Norveg. Physica Norvegica. (Oslo)

Phys. Rev. The Physical Review. (New York)

Physics. Physics. Physique. Fizika. (Long Island, N.Y.)

Physics Abstracts. Science Abstracts. Physics Abstracts. (London) (Usually abbreviated *PA* in the text of *Math. Reviews*)

Physis. Physis. Rivista Internazionale di Storia della Scienza. (Florence) (Continued as: *Physis—Riv. Internaz. Storia Sci.*)

Physis—Riv. Internaz. Storia Sci. Physis. Rivista Internazionale di Storia della Scienza. (Florence) (Formerly: *Physis*)

Pi Mu Epsilon J. Pi Mu Epsilon Journal. (Norman, Okla.)

Pokroky Mat. Fyz. Astronom. Jednota Československých Matematiků a Fyziku. Pokroky Matematiky, Fyziky a Astronomie. (Prague)

Polaka Biblio. Analiz. Mech. Polaka Akademia Nauk. Instytut Podstawowych Problemów Techniki. Polaka Bibliografia Analizy. Mechanika. Polish Scientific Abstracts. Mechanics. (Warsaw)

Portugal. Math. Portugaliae Mathematica. (Lisbon)

Portugal. Phys. Portugaliae Physica. (Lisbon)

Prace Inst. Maszyn Przeplywowych. Prace Instytutu Maszyn Przeplywowych. Transactions of the Institute of Fluid-Flow Machinery. (Warsaw)

Prace Mat. Roczniki Polskiego Towarzystwa Matematycznego. Series I. Prace Matematyczne. (Warsaw)

Prakt. Akad. Athénén. Πρακτικά τῆς Ἀκαδημίας Ἀθηνῶν. (Athens)

Praxis Math. Praxis der Mathematik. (Vienna)

Pribliz. Metod. Rešen. Differencial'. Uravnen. Približennye Metody Rešenija Differencial'nyh Uravnenij. (Kiev)

Prikl. Mat. Meh. Akademija Nauk SSSR. Otdelenie Tehničeskij Nauk. Institut Mehaniki. Prikladnaja Matematika i Mehanika. (Moscow) (Translated as: *J. Appl. Math. Mech.*)

Prikladna. Meh. Akademija Nauk Ukrainako SSR. Otdelenie Matematiki, Mehaniki i Kibernetiki. Prikladnaja Mehanika. (Kiev) (Translated as: *Soviet Appl. Mech.*)

Primenen. Mat. Ekonom. Leningradskii Ordena Lenina Gosudarstvennyi Universitet imeni A. A. Ždanova. Kafedra i Laboratorija Ekonomiko-Matematičeskij Metodov. Primenenie Matematiki v Ekonomike. (Leningrad)

Probleme der Kybernetik. Probleme der Kybernetik. (Berlin) (Translation of *Problemy Kibernet.*)

Problems of Information Transmission. Problems of Information Transmission. (New York) (Translation of *Problemy Peredači Informacii*)

Problemy Kibernet. Problemy Kibernetiki. (Moscow) (Translated as: *Systems Theory Res.*)

Problemy Mat. Anal. Slož. Sistem. Voronežskii Gosudarstvennyi Universitet. Problemy Matematičeskogo Analiza Složnyh Sistem. (Voronezh)

Problemy Peredači Informacii. Akademija Nauk SSSR. Institut Problem Peredači Informacii Akademii Nauk SSSR. Problemy Peredači Informacii. (Moscow) (Translated as: *Problems of Information Transmission*)

Proc. Amer. Math. Soc. Proceedings of the American Mathematical Society. (Providence, R.I.)

Proc. Cambridge Philos. Soc. Proceedings of the Cambridge Philosophical Society. (Cambridge, England)

Proc. Edinburgh Math. Soc. Proceedings of the Edinburgh Mathematical Society. (Edinburgh) (Contains *Proc. Edinburgh Math. Soc. Edinburgh Math. Notes*)

Proc. Edinburgh Math. Soc. Edinburgh Math. Notes. Proceedings of the Edinburgh Mathematical Society. Edinburgh Mathematical Notes. (Edinburgh) (Included in *Proc. Edinburgh Math. Soc.*)

Proc. Fac. Engrg. Keio Univ. Proceedings of the Fujihara Memorial Faculty of Engineering. Keio University. (Tokyo)

Proc. Fac. Sci. Tokai Univ. Proceedings of the Faculty of Science of Tokai University. (Tokyo)

Proc. Indian Acad. Sci. Sect. A. Proceedings of the Indian Academy of Sciences. Section A. (Bangalore)

ABBREVIATIONS OF NAMES OF JOURNALS

- Proc. Inst. Statist. Math.* The Proceedings of the Institute of Statistical Mathematics. (Tokyo)
- Proc. Iowa Acad. Sci.* Proceedings of the Iowa Academy of Science. (Des Moines, Iowa)
- Proc. Japan Acad.* Proceedings of the Japan Academy. (Tokyo)
- Proc. London Math. Soc.* Proceedings of the London Mathematical Society. (London)
- Proc. Math. Phys. Soc. U.A.R. (Egypt).* Proceedings of the Mathematical and Physical Society of U.A.R. (Egypt). (Cairo)
- Proc. Nat. Acad. Sci. India Sect. A.* Proceedings of the National Academy of Sciences, India. Section—A. (Allahabad)
- Proc. Nat. Acad. Sci. U.S.A.* Proceedings of the National Academy of Sciences of the United States of America. (Washington, D.C.)
- Proc. Nat. Inst. Sci. India Part A.* Proceedings of the National Institute of Sciences of India. Part A. Physical Sciences. (New Delhi)
- Proc. Pakistan Statist. Assoc.* Proceedings of the Pakistan Statistical Association. (Lahore)
- Proc. Rajasthan Acad. Sci.* The Proceedings of the Rajasthan Academy of Sciences. (Pilani)
- Proc. Roy. Irish Acad. Sect. A.* Proceedings of the Royal Irish Academy. Section A. (Dublin)
- Proc. Roy. Soc. Edinburgh Sect. A.* Proceedings of the Royal Society of Edinburgh. Section A. (Mathematical and Physical Sciences). (Edinburgh)
- Proc. Roy. Soc. London Ser. A.* Proceedings of the Royal Society. London. Series A. Mathematical and Physical Sciences. (London) (May also appear as: *Proc. Roy. Soc. Ser. A*)
- Proc. Roy. Soc. Ser. A.* Proceedings of the Royal Society. Series A. Mathematical and Physical Sciences. (London) (May also appear as: *Proc. Roy. Soc. London Ser. A*)
- Proc. Steklov Inst. Math.* Proceedings of the Steklov Institute of Mathematics. (Providence, R.I.) (Translation of *Trudy Mat. Inst. Steklov.*)
- Proc. Vibration Problems.* Polish Academy of Sciences. Institute of Basic Technical Problems. Proceedings of Vibration Problems. (Warsaw)
- Proc. West Virginia Acad. Sci.* West Virginia University Bulletin. West Virginia Academy of Science. Proceedings. (Morgantown, W. Va.)
- Progr. Math.* See *Shuzue Jinzhan.*
- Progr. Math. (Allahabad).* Academy for Progress of Mathematics of the University of Allahabad. Progress of Mathematics. (Allahabad)
- Progr. Theoret. Phys.* Progress of Theoretical Physics. (Kyoto)
- Przegląd Statyst.* Sekcja Statystyki Polskiego Towarzystwa Ekonomicznego. Przegląd Statystyczny. (Warsaw)
- Pskov. Ped. Inst. Fiz.-Mat. Fak. Učen. Zap.* Ministerstvo Prosveščeniya RSFSR. Pskovskii Pedagogičeskii Institut. Fiziko-Matematičeskii Fakul'tet. Učenyje Zapiski. (Pskov)
- Psychometrika.* Psychometrika. A Journal Devoted to the Development of Psychology as a Quantitative Rational Science. (Chapel Hill, N.C.)
- Publ. Centro Estudos Mat. Porto.* Publicações do Centro de Estudos Matemáticos do Porto. (Porto, Portugal)
- Publ. Dép. Math. (Lyon).* Publications du Département de Mathématiques. Faculté des Sciences de Lyon. (Lyon)
- Publ. Dept. Math. (Ljubljana).* University of Ljubljana. Institute of Mathematics, Physics and Mechanics. Publications of the Department of Mathematics. (Ljubljana)
- Publ. Inst. Math. (Beograd).* Institut Mathématique. Publications de l'Institut Mathématique. Nouvelle Série. (Belgrade)
- Publ. Inst. Statist. Univ. Paris.* Publications de l'Institut de Statistique de l'Université de Paris. (Paris)
- Publ. Math. Debrecen.* Publicationes Mathematicae. (Debrecen)
- Publ. Res. Inst. Math. Sci.* Publications of the Research Institute for Mathematical Sciences. (Kyoto) (Formerly: *Publ. Res. Inst. Math. Sci. Ser. A*; *Publ. Res. Inst. Math. Sci. Ser. B*)
- Publ. Res. Inst. Math. Sci. Ser. A.* Publications of the Research Institute for Mathematical Sciences. Series A. (Kyoto) (Continued as: *Publ. Res. Inst. Math. Sci.*)
- Publ. Res. Inst. Math. Sci. Ser. B.* Publications of the Research Institute for Mathematical Sciences. Series B. (Kyoto) (Continued as: *Publ. Res. Inst. Math. Sci.*)
- Publ. Sémin. Géom. Univ. Neuchâtel.* Publications du Séminaire de Géométrie de l'Université de Neuchâtel. (Neuchâtel)
- Quart. Appl. Math.* Quarterly of Applied Mathematics. (Providence, R.I.)
- Quart. J. Math. Oxford Ser.* The Quarterly Journal of Mathematics, Oxford Second Series. (Oxford)
- Quart. J. Mech. Appl. Math.* The Quarterly Journal of Mechanics and Applied Mathematics. (Oxford)
- Quart. Rev. Sci. Publ.* Polish Academy of Sciences. Distribution Centre for Scientific Publications. Quarterly Review of Scientific Publications. (Warsaw)
- RAAG Res. Notes.* RAAG Research Notes. (Tokyo)
- Rad Jugoslav. Akad. Znan. Umjet.* Rad Jugoslavenske Akademije Znanosti i Umjetnosti. (Zagreb)
- Radio Engrg. Electron. Phys.* Radio Engineering and Electronic Physics. (Translation of *Radiotekhnika i Elektronika*, a U.S.S.R. Academy of Sciences Publication). (New York) (Translation of *Radiotekhn. i Elektron.*)
- Radio Sci.* Radio Science. (Washington, D.C.)
- Radiophys. and Quantum Electronics.* Radiophysics and Quantum Electronics. (A translation of the *Izvestiya Vysših Učebnyh Zavedenii Radiofizika* of the Ministry of Higher Education of the USSR). (New York) (Translation of *Izv. Vysš. Učebn. Zaved. Radiofizika*) (Formerly: *Soviet Radiophys.*)
- Radiotekhn. (Har'kov).* Har'kovskii Ordena Trudovogo Krasnogo Znameni Gosudarstvennyi Universitet imeni A. M. Gor'kogo. Radiotekhnika. (Kharkov)
- Radiotekhn. i Elektron.* Akademiya Nauk SSSR. Radiotekhnika i Elektronika. (Moscow) (Translated as: *Radio Engrg. Electron. Phys.*)
- Rajasthan Univ. Studies Statist.* Rajasthan University Studies in Statistics (Science Series). (Rajasthan)
- Ratio.* Ratio. (Oxford)
- Recherche Aérospat.* La Recherche Aérospatiale. (Châtillon)
- Rend. Accad. Sci. Fis. Mat. Napoli.* Società Nazionale di Napoli. Rendiconto dell'Accademia delle Scienze Fisiche e Matematiche. (Naples)
- Rend. Circ. Mat. Palermo.* Rendiconti del Circolo Matematico di Palermo. (Palermo)
- Rend. Ist. Mat. Univ. Trieste.* Rendiconti dell'Istituto di Matematica dell'Università di Trieste. (Trieste)
- Rend. Ist. Statist. Ser. A.* Rendiconti dell'Istituto di Statistica. Serie A. (Milan)
- Rend. Mat.* Rendiconti di Matematica. Università degli Studi di Roma. Istituto Matematico Guido Castelnuovo. Istituto di Matematica Applicata. Istituto Nazionale di Alta Matematica. (Rome) (Formerly: *Rend. Mat. e Appl.*)
- Rend. Mat. e Appl.* Università di Roma. Istituto Nazionale di Alta Matematica. Rendiconti di Matematica e delle sue Applicazioni. (Rome) (Continued as: *Rend. Mat.*)
- Rend. Sem. Fac. Sci. Univ. Cagliari.* Rendiconti del Seminario della Facoltà di Scienze della Università di Cagliari. (Cagliari)
- Rend. Sem. Mat. Fis. Milano.* Rendiconti del Seminario Matematico e Fisico di Milano. (Milan)
- Rend. Sem. Mat. Messina.* Rendiconti del Seminario Matematico di Messina. (Messina)

ABBREVIATIONS OF NAMES OF JOURNALS

- Rend. Sem. Mat. Univ. Padova.* Rendiconti del Seminario Matematico dell'Università di Padova. (Padua)
- Rep. Comput. Centre Univ. Tokyo.* Report of the Computer Centre. University of Tokyo. (Tokyo)
- Rep. Fac. Sci. Kagoshima Univ.* Reports of the Faculty of Science of Kagoshima University. (Kagoshima) (Formerly: *Sci. Rep. Kagoshima Univ.*)
- Rep. Fac. Sci. Shizuoka Univ.* Shizuoka University. Faculty of Science. Reports of the Faculty of Science. Shizuoka University. (Shizuoka)
- Rep. Inst. Sci. Tech. Univ. Tokyo.* The Reports of the Institute of Science and Technology, University of Tokyo. (Tokyo)
- Rep. Statist. Appl. Res. Un. Japan. Sci. Engrs.* Reports of Statistical Application Research, Union of Japanese Scientists and Engineers. (Tokyo)
- Rep. Univ. Electro-Commun.* Reports of the University of Electro-Communications. (Tokyo)
- Repúb. Venezuela Bol. Acad. Ci. Fis. Mat. Natur.* República de Venezuela. Boletín de la Academia de Ciencias Físicas, Matemáticas y Naturales. (Caracas)
- Res. Bull. Fac. Ed. Oita Univ.* The Research Bulletin of the Faculty of Education. Oita University. (Oita)
- Res. Bull. Panjab Univ.* Research Bulletin of the Panjab University. (Chandigarh)
- Res. Rep. Anan Tech. College.* Research Reports of the Anan Technical College. (Anan)
- Res. Rep. Nagaoka Tech. College.* Research Reports of the Nagaoka Technical College. (Nagaoka)
- Res. Rep. Tokyo Electrical Engrg. College.* Research Reports of Tokyo Electrical Engineering College. (Tokyo)
- Rev. Acad. Ci. Madrid.* Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid. (Madrid)
- Rev. Acad. Ci. Zaragoza.* Revista de la Academia de Ciencias Exactas, Físico-Químicas y Naturales de Zaragoza. (Zaragoza)
- Rev. CETHEDEC.* Revue du Centre d'Études Théoriques de la Détection et des Communications. (Paris)
- Rev. Ci. (Lima).* Revista de Ciencias. (Lima)
- Rev. Colombiana Mat.* Revista Colombiana de Matemáticas. (Bogotá) (Formerly: *Rev. Mat. Elem.*)
- Rev. Fac. Ci. Univ. Coimbra.* Revista de Faculdade de Ciências da Universidade de Coimbra. (Coimbra)
- Rev. Française Informat. Recherche Opérationnelle.* Association Française d'Informatique et de Recherche Opérationnelle. Revue Française d'Informatique et de Recherche Opérationnelle. (Paris)
- Rev. Française Traitement Information Chiffres.* Revue Française de Traitement de l'Information. Chiffres. (Paris)
- Rev. Histoire Sci. Appl.* Revue d'Histoire des Sciences et de leurs Applications. (Paris)
- Rev. Inst. Internat. Statist.* Revue de l'Institut International de Statistique. Review of the International Statistical Institute. (The Hague)
- Rev. Mat. Elem.* Revista de Matemáticas Elementales. (Bogotá) (Continued as: *Rev. Colombiana Mat.*)
- Rev. Mat. Hisp.-Amer.* Revista Matemática Hispano-Americana. (Madrid)
- Rev. Mexicana Fis.* Revista Mexicana de Física. (Mexico City)
- Rev. Modern Phys.* Reviews of Modern Physics. (New York)
- Rev. Roumaine Math. Pures Appl.* Académie de la République Populaire Roumaine. Revue Roumaine de Mathématiques Pures et Appliquées. (Bucharest)
- Rev. Roumaine Phys.* Revue Roumaine de Physique. (Bucharest)
- Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* Revue Roumaine des Sciences Techniques. Série de Mécanique Appliquée. (Bucharest)
- Rev. Un. Mat. Argentina.* Revista de la Unión Matemática Argentina. (Buenos Aires)
- Rice Univ. Studies.* Rice University Studies. (Houston, Tex.)
- Ricerca (Napoli).* La Ricerca. Rivista di Matematiche Pure ed Applicate. (Naples)
- Ricerche Mat.* Ricerche di Matematica. (Naples)
- Rigas Politehn. Inst. Zinātn. Raksti.* Rīgas Politehniskais Institūts. Rīzskā Politehniskā Institūta. Uēnyes Zapiški. Rīgas Politehniskais Institūts Zinātniskie Raksti. (Riga)
- Riv. Mat. Univ. Parma.* Rivista di Matematica della Università di Parma. (Parma)
- Riv. Nuovo Cimento.* Rivista del Nuovo Cimento. (Bologna)
- Rīžsk. Inst. Inž. Grahdan. Aviāci.* Rīžskā Institūta Inženierov Grahdanskoj Aviācij imeni Leninskogo Komsomola. (Riga)
- Rjazzansk. Gos. Ped. Inst. Učen. Zap.* Rjazzanskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Ryazan)
- Rostov-na-Donu Gos. Ped. Inst. Fiz.-Mat. Fak. Učen. Zap.* Rostovskij-na-Donu Gosudarstvennyj Pedagogičeskij Institut. Fiziko-Matematičeskij Fakul'tet. Učenyje Zapiski. (Rostov-on-Don)
- Rostov-na-Donu Gos. Univ. Učen. Zap.* Rostovskij-na-Donu Gosudarstvennyj Universitet. Učenyje Zapiski. (Ordzhonikidze)
- Rozprawy Československé Akad. Věd. Řada Mat. Přirod. Věd.* Rozprawy Československé Akademie Věd. Řada Matematických a Přírodních Věd. (Prague)
- Rozprawy Elektrotech.* Polska Akademia Nauk. Instytut Technologii Elektronowej. Rozprawy Elektrotechniczne. (Warsaw)
- Rozprawy Inż. Polska Akademia Nauk.* Instytut Podstawowych Problemów Techniki. Rozprawy Inżynierskie. (Warsaw)
- Russian Math. Surveys.* Russian Mathematical Surveys. (A translation of the survey articles and of selected biographical articles in *Uspehi Matematičeskijh Nauk*). (London) (Translation of *Uspehi Mat. Nauk*)
- RŽAvtomat. Telemek. i Vychisl. Tehn.* Akademiya Nauk SSSR. Institut Naučnoj Informacii. Referativnyj Žurnal. Avtomatika, Telemekhanika i Vychislitel'naja Tehnika. (Moscow)
- RŽFiz. Akademiya Nauk SSSR.* Institut Naučnoj Informacii. Referativnyj Žurnal. Fizika. (Moscow)
- RŽKibernet. Akademiya Nauk SSSR.* Institut Naučnoj Informacii. Referativnyj Žurnal. Kibernetika. (Moscow)
- RŽMat. Akademiya Nauk SSSR.* Institut Naučnoj Informacii. Referativnyj Žurnal. Matematika. (Moscow)
- RŽMek. Akademiya Nauk SSSR.* Institut Naučnoj Informacii. Referativnyj Žurnal. Mekhanika. (Moscow)
- Sakharth. SSR Mecn. Akad. Gamoteli. Centr. Šrom.* Sakharthvelos SSR Mecnierebatha Akademia Gamotvlihi Centr Šromebl. (Tbilisi) (Formerly listed as: *Trudy Vychisl. Centra Akad. Nauk Gruzin. SSR*)
- Sakharth. SSR Mecn. Akad. Math. Inst. Šrom.* Sakharthvelos SSR Mecnierebatha Akademia A. Razmadzis Sahelobis Tbilisais Matematikis Institutis. Šromebl. (Tbilisi) (Formerly listed as: *Akad. Nauk Gruzin. SSR Trudy Tbiliss. Mat. Inst. Razmadze*)
- Sakharth. SSR Mecn. Akad. Moambe.* Sakharthvelos SSR Mecnierebatha Akademia Moambe. (Tbilisi) (Formerly listed as: *Soobšč. Akad. Nauk Gruzin. SSR*)
- Sankhyā Ser. A.* Sankhyā (Statistics). The Indian Journal of Statistics. Series A. (Calcutta)
- Sankhyā Ser. B.* Sankhyā (Statistics). The Indian Journal of Statistics. Series B. (Calcutta)
- Saratov. Gos. Ped. Inst. Učen. Zap.* Saratovskij Gosudarstvennyj Pedagogičeskij Institut. Učenyje Zapiski. (Saratov)
- S.-B. Berlin. Math. Ges.* Sitzungsberichte der Berliner Mathematischen Gesellschaft. (Berlin)
- S.-B. Heidelberg Akad. Wiss. Math.-Natur. Kl.* Sitzungsberichte der Heidelberger Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse. (Heidelberg)

ABBREVIATIONS OF NAMES OF JOURNALS

- S.-B. Sächs. Akad. Wiss. Leipzig Math.-Natur. Kl. Sitzungsberichte der Sächsischen Akademie der Wissenschaften zu Leipzig. Mathematisch-naturwissenschaftliche Klasse. (Berlin)*
- Sb. Prací Vys. Školy Doprav. v Žilíně a Výzkum. Ústav. Doprav. v Praze. Sborník Prací Vysoké Školy Dopravní v Žilíně a Výzkumného Ústavu Dopravního v Praze. (Prague)*
- Sb. Prací Ped. Fak. v Ostravě Ser. A 1. Sborník Prací Pedagogické Fakulty v Ostravě. Seria A 1. (Ostrava)*
- Sb. Voj. Akad. (Brno). Sborník Vojenské Akademie Antonína Zápotockého. (Brno)*
- Sb. Vysoké. Učení Tech. Brno. Sborník Vysokého Učení Technického v Brně. (Brno)*
- Schr. Math. Inst. Univ. Münster. Schriftenreihe des Mathematischen Instituts der Universität Münster. (Münster)*
- Sci. Abstracts China Sect. Math. Phys. Sci. Institute of Scientific and Technical Information of China. Science Abstracts of China. Mathematical and Physical Sciences. (Peking)*
- Sci. Papers College Gen. Ed. Univ. Tokyo. Scientific Papers of the College of General Education. University of Tokyo. (Tokyo)*
- Sci. Rep. College Gen. Ed. Osaka Univ. Science Reports. College of General Education. Osaka University. (Osaka, Japan)*
- Sci. Rep. Fac. Ed. Gifu Univ. Natur. Sci. Science Reports of the Faculty of Education. Gifu University. (Natural Science). (Gifu)*
- Sci. Rep. Hiroaki Univ. Science Reports of the Hiroaki University. (Hiroaki)*
- Sci. Rep. Kagoshima Univ. Science Reports of the Kagoshima University. (Kagoshima) (Continued as: Rep. Fac. Sci. Kagoshima Univ.)*
- Sci. Rep. Kanazawa Univ. The Science Reports of the Kanazawa University. (Kanazawa)*
- Sci. Rep. Niigata Univ. Ser. A. Science Reports of Niigata University. Series A (Mathematics). (Niigata)*
- Sci. Rep. Res. Inst. Theoret. Phys. Hiroshima Univ. Scientific Reports of the Research Institute for Theoretical Physics, Hiroshima University. (Hiroshima)*
- Sci. Rep. Saitama Univ. Ser. A. The Science Reports of the Saitama University. Series A. Mathematics, Physics and Chemistry. (Urawa)*
- Sci. Rep. Tokyo Kyoiku Daigaku Sect. A. Science Reports of the Tokyo Kyoiku Daigaku (Tokyo University of Education). Section A. (Tokyo)*
- Sci. Rep. Yokohama Nat. Univ. Sect. I. Science Reports of the Yokohama National University. Section I. Mathematics, Physics. (Yokohama)*
- Sci. Sinica. Scientia Sinica. (Peking)*
- Scientia (Valparaiso). Universidad Técnica Federico Santa María. Scientia. (Valparaiso)*
- Scripta Math. Scripta Mathematica. A Quarterly Journal Devoted to the Philosophy, History, and Expository Treatment of Mathematics. (New York)*
- Sem. Math. V. A. Steklov Math. Inst. Leningrad. Seminars in Mathematics V. A. Steklov Mathematical Institute Leningrad. (New York) (Translation of Zap. Naučn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI))*
- Shengzue Xuebao. See Acta Acust. Sinica.*
- Shuzue Jinzhan. Chinese Mathematical Society. Academia Sinica. Shuzue Jinzhan (Progress in Mathematics). (Peking)*
- SIAM J. Appl. Math. SIAM Journal on Applied Mathematics. (Philadelphia, Pa.)*
- SIAM J. Control. SIAM Journal on Control. (Philadelphia, Pa.)*
- SIAM J. Numer. Anal. SIAM Journal on Numerical Analysis. (Philadelphia, Pa.)*
- SIAM Rev. SIAM Review. A Publication of the Society for Industrial and Applied Mathematics. (Philadelphia, Pa.)*
- Siberian Math. J. Siberian Mathematical Journal. (New York) (Translation of Sibirsk. Mat. Ž.)*
- Sibirsk. Mat. Ž. Akademija Nauk SSSR. Sibirskoe Otdelenie. Sibirskii Matematicheskii Zhurnal. (Moscow) (Translated as: Siberian Math. J.)*
- Simon Stevin. Simon Stevin. Wis- en Natuurkundig Tijdschrift. (Groningen-Djakarta)*
- Skand. Aktuarietidekr. Skandinavisk Aktuarietidskrift. (Uppsala)*
- Smolensk. Gos. Ped. Inst. Učen. Zap. Smolenskii Gosudarstvennyi Pedagogicheskii Institut. Učenyje Zapiski. (Smolensk)*
- Soc. Actuar. Trans. Society of Actuaries. Transactions. (Chicago, Ill.)*
- Soc. Parana. Mat. Anuário. Anuário da Sociedade Paranaense de Matemática. (Curitiba)*
- Soc. Sci. Fenn. Comment. Phys.-Math. Societas Scientiarum Fennica. Commentationes Physico-Mathematicae. (Helsinki)*
- Soobšč. Akad. Nauk Grusin. SSR. Soobščeniia Akademii Nauk Gruzinskoi SSR. (Tbilisi) See Sakharth. SSR Mecn. Akad. Moambe.*
- Soobšč. Vyčisl. Mat. Akademija Nauk SSSR. Vyčislitel'nyi Centr. Soobščeniia po Vyčislitel'noi Matematike. (Moscow)*
- Soviet Appl. Mech. Soviet Applied Mechanics. (New York) (Translation of Prikladna. Meh.)*
- Soviet Astronom. A.J. Soviet Astronomy. A.J. (A translation of Astronomičeskii Zhurnal, the astronomical journal of the Academy of Sciences of the USSR.) (New York) (Translation of Astronom. Ž.)*
- Soviet J. Nuclear Phys. American Institute of Physics. Soviet Journal of Nuclear Physics. (New York) (Translation of Jadernaja Fiz.)*
- Soviet Math. Dokl. Soviet Mathematics. Doklady. (A translation of the mathematics section of Doklady Akademii Nauk SSSR). (Providence, R.I.) (Translation of mathematics section of Dokl. Akad. Nauk SSSR)*
- Soviet Physics Acoust. Soviet Physics. Acoustics. (A translation of Akustičeskii Zhurnal of the Academy of Sciences of the USSR). (New York) (Translation of Akust. Ž.)*
- Soviet Physics Dokl. Soviet Physics. Doklady. (A translation of the physics sections of Doklady Akademii Nauk SSSR). (New York) (Translation of physics sections of Dokl. Akad. Nauk SSSR)*
- Soviet Physics J. Soviet Physics Journal. (New York) (Translation of Izv. Vysš. Učebn. Zaved. Fizika)*
- Soviet Physics JETP. Soviet Physics. JETP. (A translation of Ž. Eksperimental'noi i Teoreticheskoi Fiziki of the USSR). (New York) (Translation of Ž. Eksper. Teor. Fiz.)*
- Soviet Radiophys. Soviet Radiophysics. (A translation of the Izvestija Vysših Učebnyh Zavedenii Radiofizika of the Ministry of Higher Education of the USSR). (New York) (Translation of Izv. Vysš. Učebn. Zaved. Radiofizika) (Continued as: Radiophys. and Quantum Electronics)*
- Spisy Ped. Fak. v Ostravě. Spisy Pedagogické Fakulty v Ostravě. (Ostrava)*
- Spisy Přírod. Fak. Univ. Brno. Spisy Přírodovědecké Fakulty University v Brně. Trudy Estestvenno-Istoricheskogo Fakul'teta Universiteta v g. Brno. Publications de la Faculté des Sciences de l'Université à Brno. (Brno)*
- Statist. Theory Method Abstracts. Statistical Theory and Method Abstracts. (London)*
- Statistica (Bologna). Statistica. (Bologna)*
- Statistica Neerlandica. Statistica Neerlandica. Orgaan van de Vereniging voor Statistiek. (The Hague)*
- Stroje na Zpracování Informací. Československá Akademie Věd. Výzkumný Ústav Matematických Strojů. Research Institute of Mathematical Machines. Isledovatel'skii Institut Matematicheskikh Mašin. Stroje na Zpracování Informací. (Prague)*
- Stud. Cerc. Econom. Studii și Cercetări Economice. (Bucharest)*
- Stud. Cerc. Mat. Studii și Cercetări Matematice. (Bucharest)*
- Stud. Cerc. Mec. Apl. Studii și Cercetări de Mecanică Aplicată. (Bucharest)*

ABBREVIATIONS OF NAMES OF JOURNALS

- Studia Logica*. Polaka Akademia Nauk. Komitet Filozoficzny. *Studia Logica*. (Warsaw)
- Studia Math.* Polaka Akademia Nauk. *Studia Mathematica*. (Warsaw)
- Studia Sci. Math. Hungar.* Consilium Instituti Mathematici Academiae Scientiarum Hungaricae. *Studia Scientiarum Mathematicarum Hungarica*. (Budapest)
- Studia Univ. Babeş-Bolyai Ser. Math.-Phys.* *Studia Universitatis Babeş-Bolyai*. Series Mathematica-Physica. (Cluj)
- Studies in Appl. Math.* *Studies in Applied Mathematics*. (Cambridge, Mass.) (Formerly: *J. Math. and Phys.*)
- Sudhoffs. Arch.* *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften*. (Weisbaden)
- Sûgaku*. Mathematical Society of Japan. *Sûgaku* (Mathematics). (Tokyo)
- Su-hak kwa Mul-li*. Academy of Science of the People's Democratic Republic of Korea. Research Center for Physics and Mathematics. *Su-hak kwa Mul-li* (Mathematics and Physics). (Pyongyang)
- Summa Brasil. Math.* *Summa Brasilensis Mathematicae*. (Rio de Janeiro)
- Sverdlovsk. Gos. Ped. Inst. Učen. Zap.* *Sverdlovskii Gosudarstvennyi Pedagogičeskii Institut. Učenyje Zapiski*. (Sverdlovsk)
- Systems Theory Res.* *Systems Theory Research*. (New York) (Translation of *Problemy Kibernet.*)
- Szigma—Mat.-Közgazdasági Folyóirat*. *Szigma. Matematikai-Közgazdasági Folyóirat*. (Budapest)
- Tadžik. Gos. Univ. Učen. Zap.* *Tadžikskii Gosudarstvennyi Universitet im. V. I. Lenina. Učenyje Zapiski. Trudy Fiziko-Matematičeskogo Fakul'teta. Serija Matematičeskaja*. (Dushanbe)
- Tadžik. S.-h. Inst. Trudy.* *Tadžikskii Sel'skhozjaistvennyi Institut i Tadžikskii Gosudarstvennyi Universitet. Trudy*. (Dushanbe)
- Tallin. Politehn. Inst. Toimetised Seer. A.* *Tallinna Politehnilise Instituudi Toimetised Seeria A*. (Tallin)
- Tamkang J.* *Tamkang Journal*. (Tamkang)
- Tartu Riikl. Ül. Toimetised*. *Tartu Riikliku Ülikooli Toimetised. Učenyje Zapiski Tartuskogo Gosudarstvennogo Universiteta. Matematika-Loodusteaduskonna Töid. Trudy Estestvenno-Matematičeskogo Fakul'teta*. (Tartu)
- Taşkent. Gos. Ped. Inst. Učen. Zap.* *Ministerstvo Prosveščeniya Uzbekskoi SSR. Taškentskii Gosudarstvennyi Pedagogičeskii Institut im. Nizami. Učenyje Zapiski*. (Tashkent)
- Taşkent. Gos. Univ. Naučn. Trudy.* *Taškentskii Gosudarstvennyi Universitet. Naučnyje Trudy*. (Tashkent)
- Taşkent. Politehn. Inst. Naučn. Trudy.* *Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniya. Taškentskii Politehničeskii Institut. Naučnyje Trudy. Novaja Serija*. (Tashkent)
- Taşkent. Tekstil. Inst. Kaf. Vysš. Mat. Sb. Naučn.-Issled. Rabot Ser. Mat.* *Taškentskii Tekstil'nyi Institut. Kafedra Vysshej Matematiki. Sbornik Naučno-Issledovatel'skikh Rabot. Serija Matematiki*. (Tashkent)
- Tbilis. Gos. Univ. Trudy Ser. Fiz. Nauk.* *Tbilisskii Gosudarstvennyi Universitet. Trudy. Serija Fizičeskikh Nauk*. (Tbilisi) See *Tbilis. Saĭelmp. Univ. Šrom. Fiz. Mecn. Ser.*
- Tbilis. Gos. Univ. Trudy Ser. Meh.-Mat. Nauk.* *Tbilisskii Gosudarstvennyi Universitet. Trudy. Serija Mekaniko-Matematičeskikh Nauk*. (Tbilisi) See *Tbilis. Saĭelmp. Univ. Šrom. Mekh.-Math. Mecn. Ser.*
- Tech. Mitt. Krupp.* *Technische Mitteilungen Krupp*. (Essen)
- Tech. Rep. Engrg. Res. Inst. Kyoto Univ.* *Technical Reports of the Engineering Research Institute. Kyoto University*. (Kyoto)
- Tech. Rep. Osaka Univ.* *Technology Reports of the Osaka University*. (Osaka)
- Technometrics.* *Technometrics. A Journal of Statistics for the Physical, Chemical and Engineering Sciences*. (Princeton, N.J.)
- Tellus.* *Svenska Geofysiska Föreningen. Tellus. A Quarterly Journal of Geophysics*. (Uppsala)
- Tensor.* *Tensor. New Series. The Tensor Society*. (Tokyo)
- Teor. Funkcij Funkcional. Anal. i Priložen.* *Har'kovskii Ordena Trudovogo Krasnogo Znameni Gosudarstvennyi Universitet imeni A. M. Gor'kogo. Teorija Funkcij, Funkcional'nyj Analiz i ih Prilozhenija*. (Kharkov)
- Teor. Verojatnost. i Primenen.* *Akademija Nauk SSSR. Teorija Verojatnostei i ee Primeneniya*. (Moscow) (Translated as: *Theor. Probability Appl.*)
- Teoret. Elektrotehn.* *L'vovskii Gosudarstvennyi Universitet. Teoretičeskaja Elektrotehnika*. (Lvov)
- Teorst. Prikl. Mat.* *MVSSO URSR L'vivskii Ordena Lenina Deržavnii Universitet imeni Iv. Franka. Teoretična i Prikladna Matematika*. (Lvov)
- Thalès.* *Thalès. Recueil Annuel des Travaux de l'Institut d'Histoire des Sciences et des Techniques de l'Université de Paris*. (Paris)
- Tbilis. Saĭelmp. Univ. Šrom. Mekh.-Math. Mecn. Ser.* *Tbilisskii Saĭelmpheo Universiteti. Šromebi. Mekhanika-Matematikiš Mecnierebatha Seria*. (Tbilisi) (Formerly listed as: *Tbilis. Gos. Univ. Trudy Ser. Meh.-Mat. Nauk*)
- Tbilis. Saĭelmp. Univ. Šrom. Fiz. Mecn. Ser.* *Tbilisskii Saĭelmpheo Universiteti. Šromebi. Fizikiš Mecnierebatha Seria*. (Tbilisi) (Formerly listed as: *Tbilis. Gos. Univ. Trudy Ser. Fiz. Nauk*)
- Theor. Probability Appl.* *Theory of Probability and its Applications*. (An English translation of the Soviet journal *Teorija Verojatnostei i ee Primeneniya*). (Philadelphia, Pa.) (Translation of *Teor. Verojatnost. i Primenen.*)
- Theoria.* *Theoria. A Swedish Journal of Philosophy*. (Lund)
- Tiraspol. Gos. Ped. Inst. Učen. Zap.* *Tiraspol'skii Gosudarstvennyi Pedagogičeskii Institut im. T. G. Ševčenko. Učenyje Zapiski*. (Kishinev)
- Tjumen. Gos. Ped. Inst. Učen. Zap.* *Ministerstvo Prosveščeniya RSFSR. Tjumenskii Gosudarstvennyi Pedagogičeskii Institut. Učenyje Zapiski*. (Tyumen)
- Tôhoku Math. J.* *The Tôhoku Mathematical Journal*. (Sendai)
- Tomsk. Gos. Univ. Učen. Zap.* *Tomskii Gosudarstvennyi Universitet im. V. V. Kuľbyševa. Učenyje Zapiski*. (Tomsk)
- Topology.* *Topology. An International Journal of Mathematics*. (Oxford)
- Trabajos Estadist.* *Trabajos de Estadística*. (Madrid)
- Trans. Amer. Math. Soc.* *Transactions of the American Mathematical Society*. (Providence, R.I.)
- Trans. ASME Ser. E. J. Appl. Mech.* *Transactions of the ASME. Series E. Journal of Applied Mechanics*. (New York)
- Trans. Moscow Math. Soc.* *Transactions of the Moscow Mathematical Society*. (Providence, R.I.) (Translation of *Trudy Moskov. Mat. Obšč.*)
- Trans. New York Acad. Sci.* *Transactions of the New York Academy of Sciences*. (New York)
- Trans. Roy. Soc. Canada.* *Transactions of the Royal Society of Canada. Chemical, Mathematical and Physical Sciences*. (Ottawa)
- Trans. Roy. Soc. South Africa.* *Transactions of the Royal Society of South Africa*. (Cape Town)
- Transportation Sci.* *Operations Research Society of America. Transportation Science Section. Transportation Science*. (Baltimore, Md.)
- TRU Math.* *TRU Mathematics*. (Tokyo)
- Trudy Akad. Nauk Litov. SSR Ser. B.* *Lietuvos TSR Mokslų Akademijos Darbai. Serija B. Akademii Nauk Litovskoi SSR. Trudy. Serija B*. (Vilnius)
- Trudy Doneck. Politehn. Inst.* *Trudy Doneckogo Politehničeskogo Instituta*. (Doneck)
- Trudy Fiz. Inst. Lebedev.* *Akademija Nauk SSSR. Trudy Fizičeskogo Instituta im. P. N. Lebedeva*. (Moscow)
- Trudy Geometr. Sem.* *Akademija Nauk SSSR. Institut Naučnoj Informacii. VINITI. Trudy Geometričeskogo Seminara*. (Moscow)

ABBREVIATIONS OF NAMES OF JOURNALS

- Trudy Inst. Istor. Estestvoznani. Tehn. Akademija Nauk SSSR.* Trudy Instituta Istorii Estestvoznaniia i Tekhniki. (Moscow)
- Trudy Inst. Teoret. Astronom. Akademija Nauk SSSR.* Trudy Instituta Teoreticheskoi Astronomii. (Moscow)
- Trudy Irkutsk. Gos. Univ.* Trudy Irkutskogo Gosudarstvennogo Universiteta. (Irkutsk)
- Trudy Kazan. Aviacion. Inst.* Trudy Kazanskogo Aviacionnogo Instituta. Matematika i Mehanika. (Kazan)
- Trudy Kazan. S.-h. Inst.* Trudy Kazanskogo Sel'skhozjaistvennogo Instituta. (Kazan)
- Trudy Leningrad. Tehn. Inst. Trudy Kafedr Meh. Fak.* Ministerstvo Vysshego Obrazovaniia SSSR. Trudy Leningradskogo Tekhnologicheskogo Instituta imeni Lensoвета. Trudy Kafedr Mehanicheskogo Fakul'teta. (Leningrad)
- Trudy Mat. Inst. Steklov. Akademija Nauk Sojuza Sovetskikh Socialisticheskikh Respublik.* Trudy Matematicheskogo Instituta im. V. A. Steklova. (Moscow-Leningrad) (Translated as: *Proc. Steklov Inst. Math.*)
- Trudy Moskov. Mat. Obsh.* Trudy Moskovskogo Matematicheskogo Obshchestva. (Moscow) (Translated as: *Trans. Moscow Math. Soc.*)
- Trudy Moskov. Orden. Lenin. Energet. Inst.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniia RSFSR. Trudy Moskovskogo Ordona Lenina Energeticheskogo Instituta. (Moscow)
- Trudy Naučn. Ob'ed. Prepodav. Fiz.-Mat. Fak. Ped. Inst. Dal'n. Vostok.* Ministerstvo Prosveščenija RSFSR. Habarovskii Gosudarstvennyi Pedagogičeskii Institut. Trudy Naučnogo Ob'edinenija Prepodavatelei Fiziko-matematičeskikh Fakul'tetov Pedagogičeskikh Institutov Dal'nego Vostoka. (Khabarovsk)
- Trudy Samarkand. Gos. Univ. Mat.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniia UzSSR. Trudy Samarkandakogo Gosudarstvennogo Universiteta im. A. Navoi. Matematika. (Samarkand)
- Trudy Saratov. Inst. Meh. S.-h.* Trudy Saratovskogo Instituta Mehanizacii Sel'skogo Hozjajstva. (Saratov)
- Trudy Sem. Kraev. Zadacham.* Trudy Seminara po Kraevym Zadacham. (Kazan) (Formerly: *Trudy Sem. Obratn. Kraev. Zadacham*)
- Trudy Sem. Obratn. Kraev. Zadacham.* Trudy Seminara po Obratnym Kraevym Zadacham. (Kazan) (Continued as: *Trudy Sem. Kraev. Zadacham*)
- Trudy Sem. Teor. Differencial. Uravnenii s Otklon. Argumentom Univ. Družby Narodov Patria Lumumby.* Trudy Seminara po Teorii Differencial'nyh Uravnenii s Otklonjajukšimja Argumentom. Universitet Družby Narodov imeni Patria Lumumby. (Moscow)
- Trudy Sem. Vektor. Tensor. Anal.* Trudy Seminara po Vektornomu i Tenzornomu Analizu s ih Priloženijami k Geometrii, Mehanike i Fizike. (Moscow)
- Trudy Sibirek. Fiz.-Tehn. Inst.* Trudy Sibirskogo Fiziko-Tekhnicheskogo Instituta imeni Akademika V. D. Kuznecova. (Tomsk)
- Trudy Tashkent. Gos. Univ.* Trudy Taškentskogo Gosudarstvennogo Universiteta im. V. I. Lenina. Matematika. (Tashkent) See *Tashkent. Gos. Univ. Naučn. Trudy.*
- Trudy Tomsk. Gos. Univ. Ser. Meh.-Mat.* Trudy Tomskogo Gosudarstvennogo Universiteta im. V. V. Kuibysheva. Serija Mehaniko-Matematičeskaja. (Tomsk)
- Trudy Univ. Družby Narod.* Trudy Universiteta Družby Narodov imeni Patria Lumumby. (Moscow)
- Trudy Vsesojuz. Zaočn. Energet. Inst.* Trudy Vsesojuznogo Zaočnogo Energetičeskogo Instituta. (Moscow)
- Trudy Vyšš. Centra Akad. Nauk Armjan. SSR i Erevan. Gos. Univ.* Trudy Vyššitel'nogo Centra Akademii Nauk Armjanskoi SSR i Erevanskogo Gosudarstvennogo Universiteta. (Erevan)
- Trudy Vyšš. Centra Akad. Nauk Gruzin. SSR.* Akademija Nauk Gruzinskoi SSR. Trudy Vyššitel'nogo Centra. (Tbilisi) See *Sakharth. SSR Mecn. Akad. Gamoteli. Centr. Šrom.*
- Trudy Vyšš. Centra Tartu. Gos. Univ.* Trudy Vyššitel'nogo Centra. Tartuskii Gosudarstvennyi Universitet. (Tartu)
- Turkmen. Gos. Univ. Učen. Zap.* Ministerstvo Narodnogo Obrazovaniia TSSR. Turkmenkii Gosudarstvennyi Universitet imeni A. M. Gor'kogo. Učenyje Zapiski. (Ashkhabad)
- U.S.S.R. Comput. Math. and Math. Phys.* U.S.S.R. Computational Mathematics and Mathematical Physics. (Oxford) (Translation of *Ž. Vyšš. Mat. i Mat. Fiz.*)
- Überblicke Math.* Überblicke Mathematik. (Mannheim)
- Učen. Zap. Borisoglebsk. Gos. Ped. Inst.* Ministerstvo Prosveščenija RSFSR. Učenyje Zapiski. Borisoglebskogo Gosudarstvennogo Pedagogičeskogo Instituta. (Borisoglebsk)
- Učen. Zap. Karel. Ped. Inst. Ser. Fiz.-Mat. Nauk.* Ministerstvo Prosveščenija RSFSR. Karol'skii Pedagogičeskii Institut. Učenyje Zapiski. Serija Fiziko-Matematičeskikh Nauk. (Petrozavodsk)
- Ukrain. Fiz. Ž.* Akademija Nauk Ukraïns'koï SSR. Viddil Fiziki. Ukraïns'kii Fizičnii Žurnal. (Kiev) (Ukrainian edition)
- Ukrain. Fiz. Ž.* Akademija Nauk Ukraïnskoï SSR. Otdelenie Fiziki. Ukraïnskii Fizičeskii Žurnal. (Kiev) (Russian edition)
- Ukrain. Geometr. Sb.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniia USSR. Ukraïnskii Geometričeskii Sbornik. (Khar'kov)
- Ukrain. Mat. Ž.* Akademija Nauk Ukraïnskoï SSR. Institut Matematiki. Ukraïnskii Matematičeskii Žurnal. (Kiev) (Translated as: *Ukrainian Math. J.*)
- Ukrainian Math. J.* Ukrainian Mathematical Journal. (Translation of *Ukrain. Mat. Ž.*) (New York)
- Ul'janovsk. Gos. Ped. Inst. Učen. Zap.* Ul'janovskii Gosudarstvennyi Pedagogičeskii Institut imeni I. N. Ul'janova. Učenyje Zapiski. (Saratov)
- Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat. Fiz.* Universitet u Beogradu. Publikacije Elektrotehničkog Fakulteta. Serija Matematika i Fizika. (Belgrade)
- Univ. Beograd. Zb. Radova Građevin. Fak.* Universitet u Beogradu. Zbornik Radova Građevinskog Fakulteta u Beogradu. (Belgrade)
- Univ. Central Venezuela Bol. Fac. Ing.* Universidad Central de Venezuela. Boletín de la Facultad de Ingeniería. (Caracas)
- Univ. e Politec. Torino Rend. Sem. Mat.* Università e Politecnico di Torino. Rendiconti del Seminario Matematico (già "Conferenze di Fisica e di Matematica"). (Turin)
- Univ. Genova Pubbl. Ist. Mat.* Università di Genova Pubblicazioni dell'Istituto di Matematica. (Genova)
- Univ. Lisboa Revista Fac. Ci. A.* Universidade de Lisboa. Revista da Faculdade de Ciências. 2.ª Série. A. Ciências Matemáticas. (Lisbon)
- Univ. Madrid Publ. Sec. Mat. Fac. Ci.* Universidad de Madrid. Publicaciones de la Sección de Matemática de la Facultad de Ciencias. (Madrid)
- Univ. Nac. Ingen. Inst. Mat. Puras Apl. Notas Mat.* Universidad Nacional de Ingeniería. Instituto de Matemáticas Puras y Aplicadas. Notas de Matemáticas. (Lima)
- Univ. Nac. La Plata Publ. Fac. Ci. Fisicomat. Serie Segunda Rev. (or Contrib.)* Universidad Nacional de La Plata. Publicaciones de la Facultad de Ciencias Fisicomatemáticas. Serie Segunda. Revista (or Contribuciones). (La Plata)
- Univ. Nac. La Plata Publ. Fac. Ci. Fisicomat. Serie Tercera Publ. Esp.* Universidad Nacional de La Plata. Publicaciones de la Facultad de Ciencias Fisicomatemáticas. Serie Tercera. Publicaciones Especiales. (La Plata)
- Univ. Nac. Tucumán Rev. Ser. A.* Universidad Nacional de Tucumán. Facultad de Ciencias Exactas y Tecnología. Revista. Serie A. Matemáticas y Física Teórica. (Tucumán)
- Univ. Repúb. Fac. Ingen. Agrimens. Montevideo Publ. Inst. Mat. Estadist.* Universidad de la República. Facultad de Ingeniería y Agrimensura. Montevideo-Uruguay. Publicaciones del Instituto de Matemática y Estadística. (Montevideo)

ABBREVIATIONS OF NAMES OF JOURNALS

- Univ. Roorkee Res. J.* University of Roorkee. Research Journal. (Roorkee)
- Univ. Adama Mickiewicza w Poznaniu. Prace Wydz. Mat. Fiz. Chem. Ser. Mat.* Uniwersytet im. Adama Mickiewicza w Poznaniu. Prace Wydziału Matematyki, Fizyki i Chemii. Seria Matematyka. (Poznań)
- Unternehmensforschung.* Unternehmensforschung. Operations Research—Recherche Opérationnelle. (Würzburg)
- Ural. Gos. Univ. Mat. Zap.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniya RSFSR. Ural'skii Gosudarstvennyi Universitet im. A. M. Gorkogo. Ural'skoe Matematicheskoe Obshchestvo. Matematicheskie Zapiski. (Sverdlovsk)
- Ural. Politehn. Inst. Sb.* Ministerstvo Prosveshcheniya RSFSR. Ural'skii Politehnicheskii Institut im. S. M. Kirova. Sbornik. (Sverdlovsk)
- Uspehi Mat. Nauk.* Akademija Nauk SSSR i Moskovskoe Matematicheskoe Obshchestvo. Uspehi Matematicheskikh Nauk. (Moscow-Leningrad) (Selected articles translated as: *Russian Math. Surveys*)
- Užgorod. Gos. Univ. Naučn. Zap.* MVO USSR. Užgorodskii Gosudarstvennyi Universitet. Naučnye Zapiski. (Lvov)
- V. I. Lenin. Sakharth. Politekh. Inst. Šrom.* V. I. Leninis Sahelobis Šromis Citheli Drošis Ordenoani Sakharthvelos Politekhnikuri Institut. Šromebi. (Tbilisi) (Formerly listed as: *Gruzian. Politehn. Inst. Trudy*)
- Vesci Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk.* Vesci Akademii Navuk BSSR. Seriya Fizika-matematyčnykh Navuk. (Minsk)
- Vestnik Akad. Nauk Kazah. SSR.* Vestnik Akademii Nauk Kazahskoi SSR. (Alma-Ata)
- Vestnik Har'kov. Gos. Univ.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniya USSR. Vestnik Har'kovskogo Gosudarstvennogo Universiteta. Seriya Mekhaniko-Matematicheskaja. Zapiski Mekhaniko-Matematicheskogo Fakulteta i Har'kovskogo Matematicheskogo Obshchestva. (Kharkov)
- Vestnik Leningrad. Univ.* Vestnik Leningradskogo Universiteta. (Leningrad)
- Vestnik L'vov. Politehn. Inst.* Ministerstvo Vysshego i Srednego Special'nogo Obrazovaniya USSR. Vestnik L'vovskogo Politehnicheskogo Instituta. (Lvov)
- Vestnik Moskov. Univ. Ser. I Mat. Meh.* Vestnik Moskovskogo Universiteta. Seriya I. Matematika, Mekhanika. (Moscow)
- Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* Vestnik Moskovskogo Universiteta. Seriya III. Fizika, Astronomiya. (Moscow) (Translated as: *Moscow Univ. Bull. Ser. III Phys. Astronom.*)
- Vidya. Vidya* (Knowledge). The Journal of the Gujarat University. (Ahmedabad)
- Vierteljahr. Naturforsch. Ges. Zürich.* Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich. (Zürich)
- Vijnana Parishad Anusandhan Patrika.* Vijnana Parishad Anusandhan Patrika [The Research Journal of the Hindi Science Academy]. (Allahabad)
- Visnik Kiiv. Univ.* Visnik Kiiv's'kogo Universitetu. (Kiev)
- Visnik L'vov. Derž. Univ. Ser. Meh.-Mat.* Ministerstvo Viššol i Seređnol Special'noi Osvitii URSS. Visnik L'viv's'kogo Ordena Lenina Deržavnogo Universitetu im. Ivana Franka. Seriya Mekhaniko-Matematična. (Lvov)
- Vologod. Gos. Ped. Inst. Učen. Zap.* Vologodskii Gosudarstvennyi Pedagogičeskii Institut. Učenyje Zapiski. (Vologda) (May also appear as: *Vologod. i Čerepovec. Gos. Ped. Inst. Učen. Zap.*)
- Vologod. i Čerepovec. Gos. Ped. Inst. Učen. Zap.* Vologodskii Gosudarstvennyi Pedagogičeskii Institut. Čerepoveckii Gosudarstvennyi Pedagogičeskii Institut. Učenyje Zapiski. (Vologda) (May also appear as: *Vologod. Gos. Ped. Inst. Učen. Zap.*)
- Vol. Mat. Sb.* Ministerstvo Prosveshcheniya RSFSR. Kuibyshevskii Gosudarstvennyi Pedagogičeskii Institut imeni V. V. Kuibysheva. Volžskii Matematicheskii Sbornik. (Kuibyshev)
- Voprosy Istor. Estestvoznani. i Tehn.* Akademija Nauk SSSR. Voprosy Istorii Estestvoznaniya i Tehniki. (Moscow)
- Voprosy Kibernet. Vyčisl. Mat.* Akademija Nauk Uzbekskoi SSR. Institut Kibernetiki i Vyčislitel'nykh Centrom. Voprosy Kibernetiki i Vyčislitel'noi Matematiki. (Tashkent) (Formerly: *Voprosy Vyčisl. Mat. Tehn.*)
- Voprosy Kosmog.* Akademija Nauk SSSR. Voprosy Kosmogonii. (Moscow)
- Voprosy Vyčisl. Mat. Tehn.* Akademija Nauk Uzbekskoi SSR. Institut Mekhaniki i Vyčislitel'nykh Centr. Voprosy Vyčislitel'noi Matematiki i Tehniki. (Tashkent) (Continued as: *Voprosy Kibernet. Vyčisl. Mat.*)
- Voronež. Gos. Univ. Trudy Sem. Funkcional. Anal.* Ministerstvo Vysshego Obrazovaniya SSSR. Voronežskii Gosudarstvennyi Universitet. Trudy Seminara po Funkcional'nomu Analizu. (Voronezh)
- Voronež. Tehn. Inst. Trudy.* Voronežskii Tehnologičeskii Institut. Trudy. (Voronezh)
- Vyčisl. Mat. (Kiev).* Kievskii Gosudarstvennyi Universitet. Kafedra Vyčislitel'noi Matematiki. Vyčislitel'naja Matematika. (Kiev) (Continued as: *Vyčisl. Prikl. Mat. (Kiev)*)
- Vyčisl. Prikl. Mat. (Kiev).* Kievskii Gosudarstvennyi Universitet. Mezhvedomstvennyi Naučnyi Sbornik. Vyčislitel'naja i Prikladnaja Matematika. (Kiev) (Formerly: *Vyčisl. Mat. (Kiev)*)
- Vyčisl. Sistemy.* Akademija Nauk SSSR. Sibirskoe Otdelenie. Institut Matematiki. Vyčislitel'nye Sistemy. Sbornik Trudov. (Novosibirsk)
- Vyčisl. Tehn. Voprosy Programm.* Leningradskii Ordena Lenina Gosudarstvennyi Universitet imeni A. A. Ždanova. Kafedra Vyčislitel'noi Matematiki i Vyčislitel'nykh Centr. Vyčislitel'naja Tehnika i Voprosy Programirovaniya. (Leningrad)
- Wiadom. Mat. Roczniki Polskiego Towarzystwa Matematycznego. Ser. II.* Wiadomości Matematyczne. (Warsaw)
- Wiss. Beiträge Martin-Luther-Univ. Halle-Wittenberg.* Wissenschaftliche Beiträge der Martin-Luther-Universität Halle-Wittenberg. (Halle-Wittenberg)
- Wiss. Z. Ernst-Moritz-Arndt-Univ. Greifswald Math.-Natur. Reihe.* Wissenschaftliche Zeitschrift der Ernst-Moritz-Arndt-Universität Greifswald. Mathematisch-Naturwissenschaftliche Reihe. (Greifswald)
- Wiss. Z. Friedrich-Schiller-Univ. Jena/Thüringen.* Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität Jena/Thüringen. (Jena/Thüringen)
- Wiss. Z. Hochsch. Verkehrswesen "Friedrich List" Dresden.* Wissenschaftliche Zeitschrift der Hochschule für Verkehrswesen "Friedrich List" in Dresden. Die Anwendung mathematischer Methoden im Transport- und Nachrichtenwesen. (Dresden)
- Wiss. Z. Humboldt-Univ. Berlin Math.-Natur. Reihe.* Wissenschaftliche Zeitschrift der Humboldt-Universität Berlin. Mathematisch-Naturwissenschaftliche Reihe. (Berlin)
- Wiss. Z. Karl-Marx-Univ. Leipzig Math.-Natur. Reihe.* Wissenschaftliche Zeitschrift der Karl-Marx-Universität Leipzig. Mathematisch-Naturwissenschaftliche Reihe. (Leipzig)
- Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg Math.-Natur. Reihe.* Wissenschaftliche Zeitschrift der Martin-Luther-Universität Halle-Wittenberg. Mathematisch-Naturwissenschaftliche Reihe. (Halle-Wittenberg)
- Wiss. Z. Pädagog. Hochschule. Potsdam Math.-Natur. Reihe.* Wissenschaftliche Zeitschrift der Pädagogischen Hochschule Potsdam. Mathematisch-Naturwissenschaftliche Reihe. (Potsdam)
- Wiss. Z. Techn. Hochschule. Chem. Leuna-Merseburg.* Wissenschaftliche Zeitschrift der Technischen Hochschule für Chemie Leuna-Merseburg. (Leuna-Merseburg)
- Wiss. Z. Techn. Hochschule. Ilmenau.* Wissenschaftliche Zeitschrift der Technischen Hochschule Ilmenau. (Ilmenau)
- Wiss. Z. Techn. Hochschule. Karl-Marx-Stadt.* Wissenschaftliche Zeitschrift der Technischen Hochschule Karl-Marx-Stadt. (Karl-Marx-Stadt)
- Wiss. Z. Techn. Univ. Dresden.* Wissenschaftliche Zeitschrift der Technischen Universität Dresden. (Dresden)

ABBREVIATIONS OF NAMES OF JOURNALS

- Wyższ. Szkoła Ped. Krakow. Rocznik Nauk.-Dydakt. Prace Mat.* Wyższa Szkoła Pedagogiczna w Krakowie. Rocznik Naukowo-Dydaktyczny. Prace Matematyczne. (Cracow)
- Yokohama Math. J.* Yokohama Mathematical Journal. (Yokohama)
- Z. Angew. Math. Mech.* Zeitschrift für Angewandte Mathematik und Mechanik. Ingenieurwissenschaftliche Forschungsarbeiten. (Berlin)
- Z. Angew. Math. Phys.* Zeitschrift für Angewandte Mathematik und Physik. ZAMP. Journal of Applied Mathematics and Physics. Journal de Mathématiques et de Physiques Appliquées. (Basel)
- Z. Astrophys.* Zeitschrift für Astrophysik. (Berlin) (Continued as: *Astronom. and Astrophys.*)
- Z. Èksp. Teoret. Fiz. Akademija Nauk SSSR. Žurnal Èksperimental'noi i Teoretičeskoj Fiziki.* (Moscow) (Translated as: *Soviet Physics JETP*)
- Z. Math. Logik Grundlagen Math.* Zeitschrift für Mathematische Logik und Grundlagen der Mathematik. (Berlin)
- Z. Naturforsch.* Zeitschrift für Naturforschung. (Tübingen)
- Z. Phonetik Sprachwiss. Kommunikat.* Zeitschrift für Phonetik Sprachwissenschaft und Kommunikationsforschung. (Berlin)
- Z. Physik.* Zeitschrift für Physik. (Berlin)
- Ž. Prikl. Meh. i Tehn. Fiz.* Žurnal Prikladnoj Mehaniki i Tehničeskoj Fiziki. (Moscow) (Translated as: *J. Appl. Mech. Tech. Phys.*)
- Ž. Vyčisl. Mat. i Mat. Fiz. Akademija Nauk SSSR. Žurnal Vyčislitel'noj Matematiki i Matematičeskoj Fiziki.* (Moscow) (Translated as: *U.S.S.R. Comput. Math. and Math. Phys.*)
- Z. Wahrscheinlichkeitstheorie und Verw. Gebiete.* Zeitschrift für Wahrscheinlichkeitstheorie und Verwandte Gebiete. (Berlin)
- Zap. Meh.-Mat. Fak. i Har'kov. Mat. Obšč. See Vestnik Har'kov. Gos. Univ.*
- Zap. Naučn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI).* Zapiski Naučnyh Seminarov Leningradskogo Otdelenija Matematičeskogo Instituta im. V. A. Steklova Akademii Nauk SSSR (LOMI). (Moscow) (Translated as: *Sem. Math. V. A. Steklov Math. Inst. Leningrad*)
- Zastos. Mat. Polska Akademia Nauk. Instytut Matematyczny. Zastosowania Matematyki.* (Warsaw)
- Zbl. Zentralblatt für Mathematik und ihre Grenzgebiete.* (Berlin)
- Zbl. Math. Zentralblatt für Mathematik und ihre Grenzgebiete (Berlin-Göttingen-Heidelberg)* (Usually abbreviated *Zbl* in the text of *Math. Reviews*)
- Zeszyty Nauk. Mat. Fiz. i Chem. Wyt. Szkoł. Ped. Gdańsk. Zeszyty Naukowe Matematyka Fizyka i Chemia. Wyższa Szkoła Pedagogiczna w Gdańsku. Wydział Matematyki, Fizyki i Chemii. (Gdańsk)*
- Zeszyty Nauk. Politech. Poznań. Zeszyty Naukowe Politechniki Poznańskiej.* (Poznań)
- Zeszyty Nauk. Politech. Szczeciń. Zeszyty Naukowe Politechniki Szczecińskiej.* (Szczecin)
- Zeszyty Nauk. Politech. Warszawsk. Mat. Politechnika Warszawska. Instytut Matematyki. Zeszyty Naukowe. Matematyka i jej Zastosowanie.* (Warsaw) (Continued as: *Demonstratio Math.*)
- Zeszyty Nauk. Univ. Jagiello. Prace Fiz. Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace Fizyczne.* (Kraków)
- Zeszyty Nauk. Univ. Jagiello. Prace Mat. Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace Matematyczne. (Matematyka, Fizyka, Chemia)* (Kraków)
- Zeszyty Nauk. Univ. Jagiello. Prace z Logiki. Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace z Logiki.* (Cracow)
- Zeszyty Nauk. Univ. Łódzk. Nauki Mat. Przyrod. Ser. II. Zeszyty Naukowe Uniwersytetu Łódzkiego. Nauki Matematyczno Przyrodnicze. Seria II. (Łódź)*
- Zeszyty Nauk. Wyt. Szkoł. Ped. Opol. Zeszyty Naukowe Wyższej Szkoły Pedagogicznej w Opolu.* (Opole)
- Zhongguo Kexue Jishu Daxue Xuebao. (Peking) See J. China Univ. Sci. Techn.*

JOURNALS IN TRANSLATION

- Acta Mech. Sinica* (New York). *Acta Mechanica Sinica*. (New York) (Translation of *Acta Mech. Sinica* (Peking))
- Astrophysics*. *Astrophysics*. (A translation of *Astrofizika* of the Academy of Sciences of the Armenian SSR). (New York) (Translation of *Astrofizika*)
- Automat. Remote Control*. *Automation and Remote Control*. (A translation of *Avtomatika i Telemekhanika*, a publication of the Academy of Sciences of the USSR). (Pittsburgh, Pa.) (Translation of *Avtomat. i Telemekh.*)
- Chinese J. Phys.* (Peking) *Chinese Journal of Physics* (Peking). (A translation of *Acta Physica Sinica* of the Chinese Academy of Sciences, Peking). (New York) (Translation of *Acta Phys. Sinica*)
- Chinese Math.—Acta*. *Chinese Mathematics*. Translation of *Acta Mathematica Sinica*. (Providence, R.I.) (Translation of *Acta Math. Sinica*)
- Cybernetics*. *Cybernetics*. (New York) (A translation of *Kibernetika* (Kiev))
- Differential Equations*. *Differential Equations*. (New York) (Translation of *Differentsial'nye Uravneniya*)
- Electron. Commun. Japan*. *Institute of Electrical and Electronics Engineers. Electronics and Communications in Japan*. (A translation of *Denki Tsushin Gakkai Zasshi* of the Institute of Electrical Communication Engineers of Japan). (New York) (Translation of *Denki Tsushin Gakkai Zasshi*)
- Engrg. Cybernetics*. *Engineering Cybernetics*. English Edition of *Tekhnicheskaya Kibernetika*. (New York) (Translation of *Izv. Akad. Nauk SSSR Tehn. Kibernet.*)
- Functional Anal. Appl.* *Functional Analysis and its Applications*. (New York) (Translation of *Funktsional. Anal. i Prilozhen.*)
- Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* *Izvestiya Academy of Sciences USSR. Atmospheric and Oceanic Physics*. (Washington, D.C.) (Translation of *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosf. i Okeana*)
- Izv. Acad. Sci. USSR Phys. Solid Earth*. *Izvestiya Academy of Sciences USSR. Physics of the Solid Earth*. (Washington, D.C.) (Translation of *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli*)
- J. Appl. Math. Mech.* *Journal of Applied Mathematics and Mechanics*. (Translation of the Soviet journal *Prikladnaya Matematika i Mekhanika*). (New York) (Translation of *Prikl. Mat. Meh.*)
- J. Appl. Mech. Tech. Phys.* *Journal of Applied Mechanics and Technical Physics*. (Translation of *Ž. Prikl. Meh. i Tehn. Fiz.*) (New York)
- Magnetohydrodynamics*. *Magnetohydrodynamics*. (A translation of *Magnitnaya Gidrodinamika* of the Academy of Sciences of the Latvian SSR). (New York) (Translation of *Magnit. Gidrodinamika*)
- Math. Notes*. *Mathematical Notes of the Academy of Sciences of the USSR*. (New York) (Translation of *Mat. Zametki*)
- Math. USSR-Izv.* *Mathematics of the USSR-Izvestiya*. (Providence, R.I.) (Translation of *Izv. Akad. Nauk SSSR Ser. Mat.*)
- Math. USSR-Sb.* *Mathematics of the USSR-Sbornik*. (Providence, R.I.) (Translation of *Mat. Sb.*)
- Moscow Univ. Bull. Ser. III Phys. Astronom.* *Moscow University. Moscow University Bulletin. Series III. Physics and Astronomy*. (Acton, Mass.) (Translation of *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.*)
- Probleme der Kybernetik*. *Probleme der Kybernetik*. (Berlin) (Translation of *Problemy Kibernet.*)
- Problems of Information Transmission*. *Problems of Information Transmission*. (New York) (Translation of *Problemy Peredachi Informatsii*)
- Proc. Steklov Inst. Math.* *Proceedings of the Steklov Institute of Mathematics*. (Providence, R.I.) (Translation of *Trudy Mat. Inst. Steklov.*)
- Radio Engrg. Electron. Phys.* *Radio Engineering and Electronic Physics*. (Translation of *Radiotekhnika i Elektronika*, a U.S.S.R. Academy of Sciences Publication). (New York) (Translation of *Radiotekh. i Elektron.*)
- Radiophys. and Quantum Electronics*. *Radiophysics and Quantum Electronics*. (A translation of *Izvestiya Vysish Uchebnyh Zavedenii Radiofizika* of the Ministry of Higher Education of the USSR). (New York) (Translation of *Izv. Vys. Uchebn. Zaved. Radiofizika*) (Formerly: *Soviet Radiophys.*)
- Russian Math. Surveys*. *Russian Mathematical Surveys*. (A translation of the survey articles and of selected biographical articles in *Uspehi Matematicheskikh Nauk*). (London) (Translation of *Uspehi Mat. Nauk*)
- Sem. Math. V. A. Steklov Math. Inst. Leningrad*. *Seminars in Mathematics V. A. Steklov Mathematical Institute Leningrad*. (New York) (Translation of *Zap. Nauch. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)*)
- Siberian Math. J.* *Siberian Mathematical Journal*. (New York) (Translation of *Sibirsk. Mat. Z.*)
- Soviet Appl. Mech.* *Soviet Applied Mechanics*. (New York) (Translation of *Prikladna. Meh.*)
- Soviet Astronom. AJ.* *Soviet Astronomy. AJ.* (A translation of *Astronomicheskii Zhurnal*, the astronomical journal of the Academy of Sciences of the USSR.) (New York) (Translation of *Astronom. Zh.*)
- Soviet J. Nuclear Phys.* *American Institute of Physics. Soviet Journal of Nuclear Physics*. (New York) (Translation of *Jadernaja Fiz.*)
- Soviet Math. Dokl.* *Soviet Mathematics. Doklady*. (A translation of the mathematics section of *Doklady Akademii Nauk SSSR*). (Providence, R.I.) (Translation of mathematics section of *Dokl. Akad. Nauk SSSR*)
- Soviet Physics Acoust.* *Soviet Physics. Acoustics*. (A translation of *Akusticheskii Zhurnal* of the Academy of Sciences of the USSR). (New York) (Translation of *Akust. Zh.*)
- Soviet Physics Dokl.* *Soviet Physics. Doklady*. (A translation of the physics sections of *Doklady Akademii Nauk SSSR*). (New York) (Translation of physics sections of *Dokl. Akad. Nauk SSSR*)
- Soviet Physics J.* *Soviet Physics Journal*. (New York) (Translation of *Izv. Vys. Uchebn. Zaved. Fizika*)
- Soviet Physics JETP*. *Soviet Physics. JETP*. (A translation of *Ž. Eksperimental'noi i Teoreticheskoi Fiziki* of the USSR). (New York) (Translation of *Ž. Eksper. Teoret. Fiz.*)
- Soviet Radiophys.* *Soviet Radiophysics*. (A translation of the *Izvestiya Vysish Uchebnyh Zavedenii Radiofizika* of the Ministry of Higher Education of the USSR). (New York) (Translation of *Izv. Vys. Uchebn. Zaved. Radiofizika*) (Continued as: *Radiophys. and Quantum Electronics*)
- Systems Theory Res.* *Systems Theory Research*. (New York) (Translation of *Problemy Kibernet.*)
- Theor. Probability Appl.* *Theory of Probability and its Applications*. (An English translation of the Soviet journal *Teoriya Veroyatnostei i ee Primeneniya*). (Philadelphia, Pa.) (Translation of *Teor. Veroyatnost. i Primenen.*)
- Trans. Moscow Math. Soc.* *Transactions of the Moscow Mathematical Society*. (Providence, R.I.) (Translation of *Trudy Moskov. Mat. Obsh.*)
- U.S.S.R. Comput. Math. and Math. Phys.* *U.S.S.R. Computational Mathematics and Mathematical Physics*. (Oxford) (Translation of *Ž. Vychisl. Mat. i Mat. Fiz.*)
- Ukrainian Math. J.* *Ukrainian Mathematical Journal*. (New York) (Translation of *Ukrain. Mat. Zh.*)

ERRATA AND ADDENDA

VOLUME 19

p. 665: Grothendieck, A.

The last sentence, as it stands, is a misstatement of Grothendieck's result; the words " , at least on the Hermitian elements" must be added at the end.

VOLUME 21

#1333: Rühs, Fritz

In the last reference, replace MR 20 #145 by MR 20 #900.

VOLUME 26

Index for Volume 26

On page 1439, second column, create a new entry for Andrzej Ehrenfeucht and transfer to it items 198 and 6043 incorrectly attributed to Aniela Ehrenfeucht.

VOLUME 28

#4309: Koizumi, Sumiyuki

The first formula should be written

$$\limsup_{l \rightarrow \infty} \sup_{-\infty < x < \infty} \frac{1}{l} \int_x^{x+l} |\phi(x)|^2 dx = 0.$$

VOLUME 30

• #3052: Simões Pereira, J. M. S.

In the heading, after "(1964)," add "no. 94-95,".

• #4182: Bica, M.; Neumann, M.; Stanciu, L.

The review number is incorrectly printed as 418.

• #4397: Ubaldo, Richard

The author's name is inverted. The last name is Richard.

• Index for Volume 30

On page 1166 delete the entry for Richard Ubaldo and transfer item 4397 to the entry on page 1151 for Ubaldo Richard.

VOLUME 31

• #788: Mexia, João Tiago

In the heading, after "(1964)," add "no. 94-95,".

• #4634: Madsen Barbosa, Ruy

In the heading, after "(1964)," add "no. 96-97,".

• #4850: Cordeiro da Silva, Eliane

In the heading, after "(1964)," add "no. 94-95,".

• #4896: Teixeira de Queiroz, F.

In the heading, after "(1964)," add "no. 96-97,".

• #5815: Goncalves, A. S.; Simões Pereira, J. M. S.

In the heading, after "(1964)," add "no. 96-97,".

• #6091: Ryžakov, I. Ju.

In line 2 replace "with c_{n-1} given" by "with c_n and c_{n-1} given".

VOLUME 32

• #2982: Kaul, R. N.

In the heading, after "(1965)," add "no. 98-99,".

• #5530: Marques Henriques, J.

In the heading, after "(1964)," add "no. 96-97,".

VOLUME 33

• #1166: Miščenko, E. F.

The correct paging is 93-124.

• #1188: American Mathematical Society Translations.

In line 12 replace "MR 26 #6777" by "MR 29 #6313".

VOLUME 33 cont.

- #4167: Morgado, José
In the heading, after "(1966)," add "no. 101-102,".
- #4172: Morgado, José
In the heading, after "(1966)," add "no. 101-102,".

VOLUME 34

- #4795: Yung Chi-hsing
Remove the name in brackets from the heading. The author's name is **Yong, Chi-hsing**.

- #4209: Coutinho, Maria Eulália
In the heading, after "(1966)," add "no. 101-102,".
- #5648: Minc, G. E.
In the title, replace "quantors" by "quantifiers".

VOLUME 35

- #6796: Rao, V.
In the heading add [Rao, N. Venkateswara] after the author's name.

- #7018: Medeiros, Luis Adaoto
In the heading, after "(1966)," add "no. 101-102,".

VOLUME 37

- #1341: Samandarov, A. G.
The reviewer wishes to add the following: "M. N. Huxley has pointed out to me that the theorem as stated in the paper and quoted without comment in my review is false."

theorem becomes correct under the additional assumption that $B_y(s, t)/B_x(s, t)$ is a positive definite function."

- #1440: Oberst, Ulrich
In line 11 of the second column read " x/Y " for " Y/x ".

- #5751: Pomraning, G. C.
In the sixth line from the bottom of the first column, replace $\delta(x)$ by $S(x)$.

- #3598: Smale, S.
It should be noted in the heading that the article contains an appendix entitled "Anosov diffeomorphisms" by John Mather on pp. 792-795.

- #6452: Gupta, R. S.
In the heading, after "(1967)," add "no. 1,".

- #3806: Žarić, Ju. I.; Jurčenko, A. S.
After the name of the second author add "[Jurčenko, O. S.]".

- #6469: Pahareva, N. O.; Aleksandrovič, I. N.
After the name of the second author add "[Oleksandrovič, I. M.]".

- #4863: Ivković, Z. A.
The author wishes to add the following: "My false

- #7188: Seminar: Theory of optimal solutions, No. 1.
The publication date was omitted. Change the last line of the heading to read "Kiev, 1967. 88 pp.".

VOLUME 38

- #84: Morgado, José
In the heading, after "(1965)," add "no. 100,".

- #1475: Gupta, R. P.
In the heading, after "(1967)," add "no. 1,".

- #498: Verma, R. U.
In the heading, after "(1967)," add "no. 1,".

- #1655: Alas, O. T.
In the heading, after "(1966)," add "no. 103-104,".

- #504: Dwivedi, A. P.
In the heading, after "(1967)," add "no. 1,".

- #1710: Marques Henriques, J.
In the heading, after "(1966)," add "no. 103-104,".

- #973: Hall, Rupert A.; Hall, Mary Boas
The correct version of the authors' names is A. Rupert Hall and Marie Boas Hall.

- #2578: Pelczyński, A.
In the statement of the theorem lines 5 and 6, replace "isometric" by "isomorphic", and in lines 6 and 7 replace "there is a projection from S onto Z " by "there is a projection from X onto Z ".

- #1202: Morgado, José
In the heading, after "(1966)," add "no. 103-104,".

- #2683: Singh, K. D.; Lane, N. D.
In the heading, after "(1967)," add "no. 1,".

- #1302: Bandić, Ivan
In the heading, after "(1966)," add "no. 103-104,".

- #2694: Srivastava, R. C.
In the heading, after "(1967)," add "no. 1,".

- #1433: Venet, Luc M.
In the heading, after "(1966)," add "no. 103-104,".

VOLUME 38 cont.

- #3009: Glimm, James; Jaffe, Arthur
In the heading replace "(1968)" by "(1968/69)".
- #3018: Cahen, M.; Defrise, L.
In the heading replace "(1968)" by "(1968/69)".
- #3548: Borzdyko, V. I.
According to the author "in a Banach space" should be dropped from the title. The error is in the Russian original.
- #3589: Žarić, Ju. I.; Jurčenko, A. S.
After the name of the second author add "[Jurčenko, O. S.]".
- #3677: Singer, Ivan
In the first column of page 663 the following corrections should be made: line 17, for "A subspace of E^* " read "A subspace Γ of E^* "; line 26, for " $\gamma(y) = \gamma(y)$ " read " $\gamma(y) = \gamma(x)$ "; line 32, for "it is semičebiševian" read " G is semičebiševian"; line 35, for "A normed space is strictly convex" read "A normed space E is strictly convex".
- #3764: Meyers, Leroy F.
In the last line replace " $(\frac{1}{2}, r)$ " by " $(\frac{1}{2}, r)$ ".
- #4107: Ljahovskii, V. D.
In the heading replace "(1968)" by "(1968/69)".
- #4260: Shukla, Kripa Shankar
In the heading, after "(1967)," add "no. 1,".
- #4558: Morgado, José
In the heading, after "(1966)," add "no. 103-104,".
- #4642: Moran, W.
In line 15 replace "X is metrizable" by "X is separable".
- #4644: Bogdanowicz, W.; Kritt, B.
The information regarding an English translation, which appears as the last two lines, is incorrectly printed here. It should be placed at the end of the next review, #4645.
- #4645: Savel'ev, L. Ja.
See the preceding erratum [#4644].
- #4961: Gordon, Yehoram
In line 10 replace $\{\lambda(l_n^p)\}_{n=1}^\infty$ by $\{n^{-1/2}\lambda(l_n^p)\}_{n=1}^\infty$ and $\{\mu(l_n^p)\}_{n=1}^\infty$ by $\{n^{1/2}\mu(l_n^p)\}_{n=1}^\infty$.
- #5441: Zimmermann, Wolfhart
In the heading replace "(1968)" by "(1968/69)".
- #5811: Barnett, S.
In the first two lines replace $\sum_0^n T_i \lambda^i$ by $\sum_0^n T_i \lambda^{n-i}$ and $\sum_0^n U_i \lambda^i$ by $\sum_0^n U_i \lambda^{n-i}$.
- #5873: Ehresmann, Charles
The correct paging is 33-180 rather than 33-146 as given.

VOLUME 39

- #347: Morgado, José
In the heading, after "(1966)," add "no. 103-104,".
- #428: Singh, Ram
In the heading, after "(1967)," add "no. 1,".
- #1185: Oksak, A. I.; Todorov, I. T.
In the heading replace "(1968)" by "(1968/69)".
- #1914: Saxena, Vinod Prakash
In the heading, after "(1967)," add "no. 2,".
- #1916: Tripathi, C. S.
In the heading, after "(1967)," add "no. 1,".
- #2150: Buhštaber, V. M.
In line 11 of paragraph 3 replace " $ad_i'(X) = 0$ " by " $ad_i'(x) = 0$ ".
- #2462: Canon, M. D.; Cullum, C. D.
The bibliographical heading is incorrect. The review printed under this heading is actually a review of Paul V. Moeske and Guy de Ghellinck, "Decentralization in separable programming", *Econometrica* 37 (1969), 73-78; MR 40 #1138.
The Canon and Cullum article is reviewed as MR 39 #3827.
- #2941: Krengel, Ulrich
The reference to the work of M. A. Akcoglu and the reviewer, inserted by the editors, is not correct. The paper in question has not yet been published.
- #3253: Maloo, H. B.
After the author's name add "[Malloo, H. B.]".
- #3265: Wiener, Klaus
In the heading replace "(1968)" by "(1968/69)".
- #3271: Schleiff, Martin
In the heading replace "(1968)" by "(1968/69)".
- #3520: Virsik, Juraj
In line 9 of paragraph 4 the phrase "assujetti à certaines conditions" should be enclosed in parentheses. In line 10 of the same paragraph \mathcal{J}' and $\mathcal{J}'(V, W)$ should be changed to J' and $J'(V, W)$.
- #3712: Beiko, I. V.
The author's name is Beiko, I. V.
- #3713: Beiko, I. V.; Beiko, M. F.
The first author's name is Beiko, I. V.

TRANSLITERATION OF CYRILLIC

Russian Letter Cap. Ital.	Mathematical Reviews; Zentralblatt für Mathematik	Bulletin Signalétique	Applied Mechanics Reviews	Science Abstracts	U.S. Library of Congress	Amer. Slavic & E. European Review	Journal of Symbolic Logic
А а	a	a	a	a	a	a	a
Б б	b	b	b	b	b	b	b
В в	v	v	v	v	v	v	v
Г г	g	g	g	g	g	g	g
Д д	d	d	d	d	d	d	d
Е е	e	e	e	e	e	e	e
Ё ё	e	ë	e	ë	ë	ë	ë
Ж ж	zh	zh	zh	zh	zh	zh	zh
З з	z	z	z	z	z	z	z
И и	i	i	i	i	i	i	i
Й й	j	j	j	j	j	j	j
К к	k	k	k	k	k	k	k
Л л	l	l	l	l	l	l	l
М м	m	m	m	m	m	m	m
Н н	n	n	n	n	n	n	n
О о	o	o	o	o	o	o	o
П п	p	p	p	p	p	p	p
Р р	r	r	r	r	r	r	r
С с	s	s	s	s	s	s	s
Т т	t	t	t	t	t	t	t
У у	u	u	u	u	u	u	u
Ф ф	f	f	f	f	f	f	f
Х х	h	kh	kh	kh	kh	kh	h
Ц ц	c	c	ts	ts	ts	c	c
Ч ч	ch	ch	ch	ch	ch	ch	ch
Ш ш	sh	sh	sh	sh	sh	sh	sh
Щ щ	sch	sch	shch	shch	shch	sch	sch
Ъ ъ							
Ы ы	y	y	y	y	y	y	y
Ь ь							
Э э	è	e	e	é	é	è	e
Ю ю	ju	ju	yu	yu	iû	ju	ú
Я я	ja	ja	ya	ya	ia	ja	á

Other *Mathematical Reviews* conventions are as follows:

The Ukrainian І, і are transliterated I, i, respectively.

The Ukrainian І, і are reproduced without change.

The Serbian Ъ, ъ are transliterated Đ, đ, respectively.

The Serbian Ъ, ъ are transliterated Č, č; the Serbian Ы, ы are transliterated Dž, dž.

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)¹

The AMS Committee to Monitor Problems in Communication wishes to acknowledge that the publication of the AMS (MOS) SUBJECT CLASSIFICATION SCHEME is through the courtesy of the Editors of Mathematical Reviews. Publication in this index issue provides the necessary wide distribution of this classification scheme.

The Committee also wishes to express its warmest appreciation to all those who, by their comments and suggestions, assisted in the preparation of this classification scheme.

W. J. LEVEQUE, CHAIRMAN (1967-1970)

ALEX ROSENBERG, CHAIRMAN (1970-)

Committee to Monitor Problems in Communication

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¹The AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970) was prepared with support from the National Science Foundation under GN-857.

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INTRODUCTION

The Mathematical Offprint Service (MOS) of the American Mathematical Society is the first discipline-wide system for selective dissemination of information. It was established in 1968, primarily to provide the individual mathematician with the information he needs in a relatively simple, fast, and inexpensive manner. The essential factor in the successful operation of MOS is precise and complete classification. For this reason, the AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970) has been developed. It is very different in format from the scheme used previously by MOS; therefore, subscribers and classifiers should read these instructions carefully.

Authors who classify their own papers should keep in mind that their classifications will determine which MOS subscribers receive information about their papers. Hence, a few minutes spent in careful consideration of this scheme will insure the best possible dissemination of an author's work.

The primary aim of MOS has not changed, and with its continued operation, a data-bank of subject-classified mathematical literature in machine-readable form is beginning to be built up. This data-bank will be of increasing value as time goes on, and it is fully expected to produce many very useful by-products for mathematicians.

Each paper processed by MOS is assigned subject classification numbers from this scheme to specify its subject matter within the mathematical spectrum. Classification numbers are generally assigned by a member of a group of mathematicians (the MOS classifiers), each of whom has been selected for his expert knowledge of a particular field. In some cases, classifications are assigned by authors of articles or by editors of journals.

Generally, every paper receives one or more primary classification numbers, sufficiently many to cover the principal contributions. (In some rare cases, primary classifications may be omitted. See NONMATHEMATICAL PAPERS, page A9.)

A paper may receive one or more secondary classification numbers, depending on whether or not the principal contributions are supported by ancillary results worthy of notice. If such secondary results are included in the paper, classification numbers are assigned which recognize them.

To indicate the specific areas of mathematics in which they are interested, MOS subscribers are asked to fill out profile forms, in effect making statements such as "I want offprints of articles primarily classified as 15A24, *Matrix equations and identities*," or "Do not send me information on expository papers," or "Send me no information on articles primarily or secondarily classified in 76—XX, *FLUID MECHANICS*." The particular subject classification numbers assigned to a paper are the chief factor in determining whether a subscriber receives an offprint, an abstract, a title listing, or no information at all on an article. For this reason, classifications must be precise and complete.

Directly following this introduction is a brief description of the format of this subject classification scheme. Subscribers and classifiers should become familiar with this format. INSTRUCTIONS FOR SUBSCRIBERS begin on page A4 of this appendix; INSTRUCTIONS FOR CLASSIFIERS begin on page A7. It is strongly suggested that anyone using this scheme for any reason read both sets of instructions.

FORMAT

Listed at the front of this appendix are the 63 major sections into which this classification scheme is divided. Each major section in this scheme begins with certain "special subclasses" which can be recognized by the presence of a dash before their subclass number. An explanation of these subclasses is given later in these instructions. The following description of the format of this scheme is given without any reference to these "special subclasses."

Every major section is further subdivided into second-level subclasses.

1. In some major sections, **ALL** second-level subclasses have been further subdivided into third-level subclasses. Second-level subclasses in these major sections are indicated by bold print. (See 05—XX, 20—XX.)
2. In some major sections, **SOME, BUT NOT ALL**, second-level subclasses have been further subdivided into third-level subclasses. Second-level subclasses in these major sections are also indicated by bold print. (See 45—XX, 76—XX.)
3. In some major sections, **NO** second-level subclasses have been further subdivided into third-level subclasses. Such second-level subclasses are preceded by an A and two digits. (See 16—XX, 52—XX.)

A major section is the union of all its second-level subclasses. A second-level subclass is the union of all its third-level subclasses, if there are any.

Each subclass in this scheme can be represented by a five-character code. The first two characters of the code identify the major section which is being referred to. The last three characters indicate the particular subclass which is being referred to. The presence of an **xx** as the last two characters of a second-level subclass code indicates that the subclass has been further subdivided.

Please note that this classification scheme contains many cross references. It is hoped that persons using this scheme will use them.

The following two general rules should be noted.

1. When similar designations occur in several places in this scheme, the person classifying a paper has the responsibility to decide which ones to include, using as guides such items as flavor of the paper, author, journal, bibliography, and audience to which the paper is addressed.
2. In this scheme, if there are two subclasses (hopefully contiguous), one of which contains the other, the paper will be classified in the subclass which fits the paper best.

EXAMPLE

The subclass 35B20, *Perturbations*, contains the subclass 35B25, *Singular perturbations*. Therefore, a paper dealing with singular perturbations should be assigned 35B25 as a classification rather than 35B20.

INSTRUCTIONS FOR SUBSCRIBERS

Each time you list a subject classification code on your profile form, you will follow it by an instruction to MOS—an indication of whether or not MOS should send you information on a particular paper and, if so, how much information it should send (offprint, abstract, title listing, nothing). You may give instructions for individual third-level subclasses, for entire second-level subclasses, or for

entire major sections. If you *do* give an instruction for an entire major section (or second-level subclass), you may also give a separate qualifying instruction for any of the subclasses within it by simply including the separate instruction on your profile form. The information that follows should aid you in describing your interests accurately.

PRIMARY CLASSIFICATIONS VS. SECONDARY CLASSIFICATIONS

An article may be assigned a classification code as either a primary or a secondary classification. *If you have an interest in a particular subclass, you may wish to give two instructions for it—one for papers receiving it as a primary classification and one for papers receiving it as a secondary classification.* These two instructions will specify the amount of information you wish to receive in each of the two cases. You may wish to receive offprints of papers to which it is assigned as a primary classification; whereas, you may wish to receive only title listings of papers to which it is assigned as a secondary classification. The amount of information that you receive on a particular paper is no longer determined by whether a subclass is assigned as a primary or a secondary classification. It is determined by the instructions you have given for each case.

SPECIAL SUBCLASSES

Some or all of the "special" second-level subclasses listed below are found at the beginning of every major section. Each has a unique function and is never assigned as the sole classification of a paper. *Other subclasses, describing the mathematical content of a paper, must be assigned in conjunction with each of these "special subclasses."*

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

This subclass is a classifier's tool which may be used to indicate that the subject matter of an article cannot be completely described in terms of available subclasses.

- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

The last four "special subclasses" serve two functions:

1. A subscriber who wishes to receive information on papers falling into any of these four categories may give a suitable instruction indicating this fact on his profile form.
2. A subscriber who wishes *not* to receive information on papers in any of these categories may give an instruction indicating this fact on his profile form.

APPLICATIONS OF MATHEMATICS

(including applications of one branch of mathematics to another)

Persons interested in the applications of mathematics should note that there are three different ways in which their needs can be met.

1. If the field of applications is an established one, making heavy use of mathematics, it occurs as a *major section* in the classification scheme in which the subscriber may indicate an interest, e.g. 76—XX, *FLUID MECHANICS*.
2. In various other major sections, there are *individual subclasses* for applications of various branches of mathematics. These subclasses occur when a branch of mathematics has a sizeable literature of applications in another discipline. For example, in 60—XX,

PROBABILITY THEORY AND STOCHASTIC PROCESSES, one finds 60K20, *Applications of Markov renewal processes (reliability, queueing networks, etc.)*. However, the subscriber should note that subclasses such as 60K20 will often have a similar or somewhat similar counterpart in one of the major sections which deal specifically with applications. Thus, in 90—XX, *ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES*, there is the subclass 90B25, *Reliability and maintenance*. Although 60K20 and 90B25 are similar, there will be papers which will receive only one of the two as a classification. Thus, giving an instruction for one will not have the same results as giving an instruction for the other.

3. Any interest not adequately covered by (1) and (2) above can be defined either by *exclusion instructions* or by appropriate *Boolean equations* on the profile form. For example,

a. A fluid dynamicist might express an interest in 76D05, *FLUID MECHANICS; Navier-Stokes equations*. However, he may not be at all interested in the pure theory of such equations and so might wish to indicate that his interest in 76D05 does not extend to papers receiving classifications of both 76D05 and 35Q10, *PARTIAL DIFFERENTIAL EQUATIONS: Navier-Stokes equations*. Therefore, he would exclude 35Q10 on his profile form.

b. A production engineer with training in probability, but not in mathematical programming, might find both 60K30, *Applications (congestion, allocation, storage, traffic, etc.)* and 90B30, *Production theory*, too broad. His real interest may lie in papers which receive both of these subclasses among their classifications.

c. A man working in only one branch of 43—XX, *ABSTRACT HARMONIC ANALYSIS*, perhaps 43A45, *Spectral synthesis on groups and semigroups*, might feel that he should keep abreast of all applications of 18—XX, *CATEGORY THEORY*, to 43—XX. In that case, in addition to specifying an interest in papers classified as 43A45, he should make a Boolean equation requesting information on papers which receive any subclasses of 18—XX and 43—XX among their classifications.

Care should be taken to distinguish between primary and secondary classifications. Thus the man in (c) above might specify

$$P18-XX \cap (P43-XX \cup S43-XX) = \text{Offprint}$$

or

$$P18-XX \cap P43-XX = \text{Offprint}$$

$$P18-XX \cap S43-XX = \text{Title listing}$$

to give only two of the possibilities. (P is used to indicate a primary classification; S is used to indicate a secondary classification.)

EXCLUSIONS

An understanding of the principle below will enable you to exclude those articles in which you have no interest although some of their classifications may coincide with subclasses for which you have given positive instruction. (In addition to the exclusions described below, subscribers also may elect an option which will exclude major sections 65—XX through 94XX, dealing specifically with applications.)

Articles will often receive more than one primary or more than one secondary classification. An instruction for one of the classifications of an article may be sufficient to direct information to a subscriber. Therefore, subscribers are allowed to exclude subclasses in which they have no interest. An exclusion instruction for a particular subclass will prevent a subscriber from receiving unwanted information on a paper, regardless of instructions he may have made for any of the other classifications of the paper. (In other words, exclusion overrides.)

This ability to exclude is an important and valuable tool, and you should check the classification scheme carefully so that you will exclude any subclasses which might direct extraneous information to you. Several examples follow which might assist you in preparing your profile form.

EXAMPLE 1

A subscriber interested in harmonic analysis on groups and semigroups, and also interested in advanced expository papers, might indicate an interest in papers primarily classified 43A65, *ABSTRACT HARMONIC ANALYSIS: Representations of groups and semigroups*, and 43—02, *ABSTRACT HARMONIC ANALYSIS: Advanced exposition (research surveys, etc.)*, but make an exclusion of 43—01, *ABSTRACT HARMONIC ANALYSIS: Elementary exposition (collegiate level)*, when it appears as either a primary or a secondary classification of a paper.

EXAMPLE 2

A subscriber might be interested in receiving information on finite permutation groups, but might not be interested in expository papers. He would, therefore, indicate an interest in papers primarily classified as 20B05, *Finite permutation groups; General theory*, or 20B10, *Finite permutation groups; Characterization theorems*; and he would exclude 20—01, *GROUP THEORY AND GENERALIZATIONS: Elementary exposition (collegiate level)*, and 20—02, *GROUP THEORY AND GENERALIZATIONS: Advanced exposition (research surveys, etc.)*, when they are assigned as either primary or secondary classifications of papers.

EXAMPLE 3

A subscriber not interested in the historical development of his field of interest, which might be a subclass of 53—XX, *DIFFERENTIAL GEOMETRY*, might indicate an interest in papers classified primarily as 53C25, *Special Riemannian manifolds*, and/or 83C05, *Einstein's equations*, but exclude 53—03, *DIFFERENTIAL GEOMETRY: Historical*, and 83—03, *RELATIVITY: Historical*, when they appear as either primary or secondary classifications of papers.

EXAMPLE 4

A pure probabilist who is not at all interested in the applications of probability theory might have indicated an interest in many subclasses of 60—XX, *PROBABILITY THEORY AND STOCHASTIC PROCESSES*. To avoid receiving information on applications of probability theory, however, he may wish to exclude 62—XX, *STATISTICS*; 90—XX, *ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES*; 94—XX, *INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA*, when any of their subclasses are assigned as primary or secondary classifications of articles. He may also wish to exclude other major sections dealing specifically with applications of mathematics to other disciplines.

EXAMPLE 5

A man interested in Lie algebras might not be at all interested in its applications to physics. Therefore, he may wish to exclude all papers which receive primary or secondary classifications from 81—XX, *QUANTUM MECHANICS*. He may also wish to exclude other major sections which deal specifically with the applications of mathematics to other disciplines.

EXAMPLE 6

Subscribers who do not wish to receive information about papers which deal with questions of mathematical education should exclude 96—XX, *MATHEMATICAL EDUCATION, ELEMENTARY*; 97—XX, *MATHEMATICAL EDUCATION, SECONDARY*; 98—XX, *MATHEMATICAL EDUCATION, COLLEGIATE*, when they are assigned as either primary or secondary classifications of papers.

INSTRUCTIONS FOR CLASSIFIERS

Assignment of meaningful classification numbers is the essential ingredient in insuring that information about an article reaches subscribers who would be most interested in seeing it. It is expected that assigning a

subject classification number as a *primary* classification will result in the subscriber receiving an offprint, while assigning it as a *secondary* classification will result in the subscriber receiving an abstract or a title listing for the article. It is better, therefore, to assign too many classification numbers to a paper than too few. When in doubt, it is better to assign a classification number as a secondary classification than not to assign it at all. *Classifiers should not try to act as referees; even if they feel that a paper is of little interest, there may still be subscribers who wish to receive information about the paper.* It must be borne in mind at all times that failing to assign a classification number to an article may result in information being lost for somebody who may wish to see the article.

Classification codes assigned to articles must always end in two digits; thus any classification code ending in xx is unacceptable as a MOS classification for an article. A second-level subclass can be used as a classification for an article *if and only if* it has not been further subdivided.

1. Classification codes which would be *acceptable* as MOS classifications:

15A27, 34H05, 42A64, 49A15

Of course, classification codes for the "special subclasses" such as 57—03 and 92—00 are also acceptable when used in conjunction with other classification codes.

2. Classification codes which would be *unacceptable* as MOS classifications:

16—XX, 32—XX, 35—XX, 31Bxx, 57Cxx

A classification code such as 10—03 or 55—04 is unacceptable as a MOS classification when it is the sole classification assigned to a paper.

It is worthwhile for a reader of these instructions to locate some or all of these subclasses in the scheme in order to understand why they are acceptable or unacceptable as classifications.

SPECIAL SUBCLASSES

The designers of this classification scheme are painfully aware that, despite their best efforts, there will be gaps in this scheme. This fact is inherent in the nature of mathematics as an evolving science. Almost every subdivided second-level subclass, therefore, ends with the following third-level subclass.

n99 None of the above, but in this section

(This subclass has been deliberately omitted from a few second-level subclasses whose existing third-level subclasses exhaust the subject matter.)

This 99 subclass should be used to indicate that although there is an appropriate second-level subclass for a paper, it has been subdivided and there is no appropriate third-level subclass within it.

* * * * *

There may be papers, however, for which there is not even an appropriate second-level subclass within a particular major section. Thus, the —00 subclass.

—00 Difficult to classify at the second-level (must also be assigned at least one other classification number in this section)

If there is no appropriate second-level subclass for a paper within a particular major section, the person classifying the paper should (1) assign the paper a classification of —00 from that major section and (2) select the existing second-level subclass within the major section which would direct the paper to persons interested in seeing it. If this second-level subclass *has not been* further subdivided, he should assign it as a classification of the paper. If it *has been* further subdivided, he should assign its 99 subclass as a classification of the paper. Such papers should also receive any other appropriate classifications from any other major sections.

* * * * *

—01 Elementary exposition (collegiate level)

—02 Advanced exposition (research surveys, etc.)

This classification scheme offers a means of indicating that a paper is expository in nature. Furthermore, the person classifying can indicate whether the level of exposition is elementary or advanced. Survey papers and expository articles for research mathematicians should be assigned a classification of —02. Other expository papers should be assigned a classification of —01. It is conceivable that a paper be assigned —01 (or —02) from more than one major section. *A paper classified in an —01 or —02 subclass must also be assigned other classification numbers, including ones from the major section in which it was judged expository.* Thus, an expository paper will be directed not only to those persons who have specifically indicated an interest in such papers, but also to those persons whose interests coincide with the specific subject matter of the paper.

* * * * *

—03 Historical

To indicate that a paper deals with the historical development of a field, the subclass —03 should be used. *A paper classified as "historical" must also be assigned other classification numbers, including ones from the major section in which it was judged historical.* For example, a paper dealing with the historical development of Π -groups should receive among its classifications both 20—03, *GROUP THEORY AND GENERALIZATIONS: Historical*, and 20D20, *Sylow subgroups, Π -groups*.

* * * * *

—04 Explicit machine computation and programs (not the theory of computation or programming)

If a paper in a particular area derives some of its interest from machine computation or programming in that area, it should be assigned the classification —04 from that particular major section. *Of course, other classification numbers, describing the subject matter of the paper, must also be assigned to the paper.* This subclass should not be assigned to those papers dealing with the theory of computation or programming. Those papers should presumably receive classifications from one or more of the following major sections: 02—XX, *LOGIC AND FOUNDATIONS*; 68—XX, *COMPUTER SCIENCE*; 94—XX, *INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA*.

APPLICATIONS

For papers in the applied areas, the mathematical methods used should be recognized by assigning either a primary or secondary classification to the paper from any part of the classification scheme. Presumably, a primary classification would be assigned for this purpose only if some substantial contribution to the method area is made in the paper.

MOS subscribers are told how to express an interest in a combination of fields, and they are also told how to indicate a lack of interest in a combination of fields. For example, a mathematician interested in 34—XX, *ORDINARY DIFFERENTIAL EQUATIONS*, might want to keep abreast of applications of his field only to 70—XX, *MECHANICS OF PARTICLES AND SYSTEMS*, and not to other applied areas. MOS allows him to express an interest in 70—XX only when it is in conjunction with 34—XX. MOS also allows him to express that he is not interested in 34—XX when it is in conjunction with any other applied areas. It is the responsibility of the classifier, therefore, to see that proper recognition is given to the methods used in papers dealing with applications.

NONMATHEMATICAL PAPERS

Occasionally, a journal participating in MOS publishes an article whose subject matter is primarily in some area other than mathematics. Such papers need not receive any primary classifications; secondary classifications only, describing the mathematical content of the papers, are sufficient.

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

Omitting primary classifications should occur only in rare cases; this mechanism should not be used by classifiers in an attempt to referee papers. The absence of a primary classification should be a reflection only of the nonmathematical nature of a paper and not of the classifier's evaluation of the paper.

Comments or questions concerning the AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970) or its instructions should be directed to:

Mathematical Offset Service
American Mathematical Society
P. O. Box 6248
Providence, Rhode Island 02904

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

00—XX GENERAL

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- A05 General mathematics
- A10 Collections of papers: Proceedings of conferences of general interest, translation volumes, etc. [See also 01A75.]
- A15 General bibliographies
- A20 Dictionaries and other general reference works
- A25 Methodology and philosophy of mathematics

01—XX HISTORY AND BIOGRAPHY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- A05 General histories, source books
- A10 Primitive
- A15 Pre-Greek, Babylonian, Egyptian
- A20 Greek
- A25 Far East
- A30 Islam
- A35 Medieval
- A40 15th and 16th centuries, Renaissance
- A45 17th century
- A50 18th century
- A55 19th century
- A60 20th century
- A65 Contemporary
- A70 Biographies, obituaries, personalia
- A75 Collected or selected works; reprintings or translations of classics

02—XX LOGIC AND FOUNDATIONS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

02A05 Philosophical and critical

02Bxx Classical logical systems

- B05 Propositional calculus
- B10 Predicate calculus
- B15 Higher order predicate calculus
- B20 Unusual quantifiers
- B25 Infinitely long sentences
- B99 None of the above, but in this section

02Cxx Nonclassical formal systems

- C05 Many-valued logic
- C10 Modal logic, etc.
- C15 Formalizations of intuitionism, etc.
- C20 Combinatory logic
- C99 None of the above, but in this section

02Dxx Proof theory

- [For theorem proving by machines, see 68A40.]
- D05 Proof theoretic ordinals

D99 Other proof theory

02Exx Constructive mathematics

- E05 Intuitionistic mathematics
- E10 Algorithms
- E15 Computable functions
- E99 None of the above, but in this section

02Fxx Recursion theory

- F05 True and Post systems, etc.
- F10 Automata [See also 18B20, 68A25, 94A30, 94A35.]
- F15 Turing machines
- F20 Classification of recursive functions
- F25 Recursively enumerable sets
- F27 Recursion theory on ordinals and sets and other abstract structures
- F29 Recursion theory at higher types
- F30 Degrees of unsolvability
- F35 Hierarchies
- F40 Recursive equivalence types
- F43 Formal systems for computability
- F45 Combinatorial functions
- F47 Word problems
- F50 Applications
- F99 None of the above, but in this section

02Gxx Methodology of deductive systems

- G05 Decidability and undecidability
- G10 Axiomatizability
- G15 Finite axiomatizability
- G20 Completeness, categoricity, etc.
- G99 None of the above, but in this section

02Hxx Model theory

- H05 Models for theories in classical predicate calculus
- H10 Models for other theories
- H13 Model constructions
- H15 Applications to algebra, number theory, etc. [See also 13L05.]
- H20 Nonstandard models
- H25 Applications of nonstandard models [See also 10N15, 12L15, 26A98, 30A91.]
- H99 None of the above, but in this section

02Jxx Algebraic logic

- J05 Boolean algebras, lattices, topologies
- J10 Algebra of relations
- J15 Cylindric and polyadic algebras
- J99 None of the above, but in this section

02Kxx Set theory

- K05 Consistency and independence results
- K10 Nonclassical set theories
- K15 Axiomatics
- K20 Axiom of choice and equivalent propositions (Zorn's Lemma, etc.) [See also 04A25.]
- K25 Continuum hypothesis, generalized continuum hypothesis [See also 04A30.]
- K30 Descriptive set theory; Borel classifications, Suslin schemes, etc. [See also 04A15, 28A05, 54H05.]
- K35 Large cardinals and ordinals (inaccessible, etc.)
- K99 None of the above, but in this section

04—XX SET THEORY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 01 Elementary exposition (collegiate level)
 - 02 Advanced exposition (research surveys, etc.)
 - 03 Historical
 - 04 Explicit machine computation and programs (not the theory of computation or programming)
 - A05 Relations, functions [See also 08A05.]
 - A10 Transfinite numbers
 - A15 Descriptive set theory; Borel classifications, Suslin schemes, etc. [See also 02K30, 28A05, 54H05.]
 - A20 Combinatorial [See also 05A05.]
 - A25 Axiom of choice and equivalent propositions (Zorn's Lemma, etc.) [See also 02K20.]
 - A30 Continuum hypothesis, generalized continuum hypothesis [See also 02K25.]
- 05—XX COMBINATORICS** [For finite fields, see 12Cxx.]
- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 - 01 Elementary exposition (collegiate level)
 - 02 Advanced exposition (research surveys, etc.)
 - 03 Historical
 - 04 Explicit machine computation and programs (not the theory of computation or programming)
- 05Axx Classical combinatorial problems**
- A05 Combinatorial choice problems; subsets, representatives
 - A10 Factorials, binomial coefficients, combinatorial functions
 - A15 Combinatorial enumeration problems, generating functions
 - A17 Partitions [See also 10A45.]
 - A19 Combinatorial identities
 - A20 Combinatorial inequalities
 - A99 None of the above, but in this section
- 05Bxx Designs and configurations**
- B05 Block designs [See also 62Kxx.]
 - B10 Difference sets (number-theoretic, group-theoretic, etc.)
 - B15 Orthogonal arrays, Latin squares
 - B20 Matrices (incidence, Hadamard, etc.)
 - B25 Finite geometries
 - B30 Other designs, configurations
 - B35 Matroids, geometric lattices
 - B40 Packing and covering [See also 10E30, 52A45.]
 - B45 Tessellation and tiling problems
 - B99 None of the above, but in this section
- 05Cxx Graph theory** [For applications of graphs, see 94A20.]
- C05 Trees
 - C10 Topological graph theory, embedding [See also 55A15, 55A25.]
 - C15 Chromatic theory of graphs and maps
 - C20 Directed graphs (digraphs)
 - C25 Graphs and groups
 - C30 Enumeration of graphs and maps
 - C35 Paths and extremal problems
 - C99 None of the above, but in this section

A12

06—XX ORDER, LATTICES, ORDERED ALGEBRAIC STRUCTURES

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Total order
- A10 Partial order
- A15 Galois correspondence, closure operators
- A20 Lattices, semi-lattices, generalizations
- A23 Complete lattices
- A25 Complemented lattices, generalizations
- A30 Modular lattices, continuous geometries, generalizations [See also 16A30.]
- A35 Distributive lattices, generalizations
- A40 Boolean algebras and rings
- A45 Order topologies [See also 54F05.]
- A50 Ordered semigroups, other generalizations of groups
- A55 Ordered groups
- A60 Ordered abelian groups
- A65 Ordered linear spaces [See also 46A40.]
- A70 Ordered rings, algebras, modules [For ordered fields, see 10M15, 12J15.]
- A75 Other ordered algebraic structures

08—XX GENERAL MATHEMATICAL SYSTEMS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Structure of general algebras and relational systems [For topological representation, see 54H10.]
- A10 Free algebras, sums, products, limits, colimits
- A15 Varieties of algebras and generalizations
- A20 Axiomatic model classes
- A25 Universal algebra

10—XX NUMBER THEORY [Excluding 10Axx and 10Mxx, this classification scheme does not distinguish work in the rational number fields from that in other algebraic number fields.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 10Axx Elementary number theory** [For analogues in number fields, see 12A05.]
- A05 Multiplicative structure of the integers (GCD, etc.)
 - A10 Congruences, primitive roots
 - A15 Power residues, reciprocity
 - A20 Number theoretic functions, related numbers; inversion formulas
 - A25 Elementary prime number theory, factorization
 - A30 Algorithms and expansions, digital properties [Approximation results in 10F20; metric results in 10K10.]
 - A35 Recurrence sequences
 - A40 Special numbers, sequences and polynomials (e.g. Bernoulli)
 - A45 Partitions
 - A99 None of the above, but in this section
- 10Bxx Diophantine equations** [For all papers involving algebraic-geometric methods, see 14Gxx.]
- B05 Linear, quadratic and bilinear equations
 - B10 Cubic and quartic equations
 - B15 Higher degree equations
 - B20 Multiplicative equations
 - B25 Nonpolynomial equations
 - B30 Equations in sufficiently many variables [See also 10J10.]
 - B35 Representation problems [See also 10J10.]
 - B40 p -adic and power series fields
 - B45 Diophantine inequalities
 - B99 None of the above, but in this section
- 10Cxx Forms**
- C05 Quadratic and hermitian forms [See also 10E25.]
 - C10 Higher degree forms
 - C15 Analytic theory
 - C20 p -adic theory
 - C25 Minima of forms [See also 10E20.]
 - C30 Arithmetic properties of classical groups [See also 20Gxx.]
 - C99 None of the above, but in this section
- 10Dxx Automorphic theory**
- D05 Modular functions and groups
 - D10 Automorphic functions, one variable
 - D15 Automorphic forms, one variable
 - D20 Automorphic theory, several variables
 - D25 Complex multiplication [See also 14K22.]
 - D99 None of the above, but in this section
- 10Exx Geometry of numbers**
- E05 Lattices and convex bodies [See also 10J25.]
 - E10 Nonconvex bodies
 - E15 Products of linear forms
 - E20 Minima of forms
 - E25 Quadratic forms (reduction, extreme forms, etc.)
 - E30 Lattice packing and covering [See also 0B540, 52A45.]
 - E35 Mean value theorems
 - E40 Transfer theorems
 - E45 Automorphism groups of lattices
 - E99 None of the above, but in this section
- 10Fxx Diophantine approximation** [See also 10Kxx.]
- F05 Approximation to one number

- F10 Simultaneous approximation
 - F15 Nonhomogeneous approximation
 - F20 Continued fractions and generalizations [See also 10A30.]
 - F25 Approximation to algebraic numbers
 - F30 Approximation by numbers from a fixed field
 - F35 Irrationality and transcendence
 - F40 Distribution modulo one [See also 10K05.]
 - F45 Approximation in nonarchimedean valuations
 - F99 None of the above, but in this section
- 10G05 Exponential sums, character sums**
- 10Hxx Multiplicative theory**
- H05 Riemann zeta-function
 - H10 Other zeta-functions, L -functions [For local and global ground fields, see 12A70, 12A80, 12B30, 12B35; for algebraic-geometric methods, see 14G10.]
 - H15 Distribution of primes and of integers with specified multiplicative properties
 - H20 Distribution in progressions and other sequences
 - H25 Asymptotic results on arithmetic functions
 - H30 Sieves
 - H35 Distribution of residue classes (primitive roots, power residues, etc.)
 - H40 Generalized primes and integers
 - H99 None of the above, but in this section
- 10Jxx Additive theory**
- J05 Sums of squares
 - J10 Applications of Hardy-Littlewood method [See also 10B35.]
 - J15 Additive questions involving primes
 - J20 Analytic work on partitions [See also 10A45.]
 - J25 Lattice points in large regions
 - J99 None of the above, but in this section
- 10Kxx Probabilistic theory; measure, dimension, etc.**
- K05 Distribution modulo one
 - K10 Algorithms and expansions
 - K15 Diophantine approximation
 - K20 Arithmetic functions
 - K25 Normal numbers
 - K30 Irregularities of distribution
 - K35 Harmonic analysis and almost periodicity
 - K40 Nonarchimedean theory
 - K99 None of the above, but in this section
- 10Lxx Sequences of integers**
- L05 Addition of sequences
 - L10 Special sequences (density, etc.)
 - L15 Representation functions
 - L99 None of the above, but in this section
- 10Mxx Rational arithmetic of algebraic objects**
- M05 Polynomials [See also 13F20.]
 - M10 Valued fields
 - M15 Ordered fields
 - M20 Matrices [See also 15A36.]
 - M99 None of the above, but in this section
- 10Nxx Connections with logic**
- N05 Decidability
 - N10 Ultraproducts
 - N15 Nonstandard arithmetic [See also 02H25.]
 - N99 None of the above, but in this section

**12—XX ALGEBRAIC NUMBER THEORY, FIELD THEORY
AND POLYNOMIALS**

- 00 Difficult to classify at the second level
(must also be assigned at least one other
classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys,
etc.)
- 03 Historical
- 04 Explicit machine computation and pro-
grams (not the theory of computation or
programming)
- 12Axx Algebraic number theory: global fields**
(For complex multiplication, see 10D25.)
 - A05 Analogues in number fields of elementary
number theory
 - A10 Characterizations of algebraic numbers
and algebraic functions
 - A15 Special algebraic numbers (PV numbers,
etc.)
 - A20 Polynomials (irreducibility, etc.)
 - A25 Quadratic fields
 - A30 Cubic and quartic fields
 - A35 Abelian and metabelian extensions (in-
cluding cyclotomic, Kummer, cyclic)
 - A40 Other number fields
 - A45 Units and factorization
 - A50 Class number, discriminant
 - A55 Galois theory
 - A60 Galois cohomology
 - A65 Class field theory
 - A70 Zeta-functions and L -functions of
number fields [See also 10H10.]
 - A75 Density theorems
 - A80 Arithmetic and zeta-functions of algebras
 - A85 Analysis in adèle rings and groups
 - A90 Arithmetic theory of algebraic function
fields [See also 14—XX.]
 - A95 Totally real and totally positive fields
 - A99 None of the above, but in this section
- 12Bxx Algebraic number theory: local and p -adic fields**
 - B05 Polynomials
 - B10 Ramification and extension theory
 - B15 Galois theory
 - B20 Galois cohomology
 - B25 Class field theory
 - B30 Zeta- and L -functions [See also 10H10.]
 - B35 Arithmetic and zeta-functions of algebras
 - B40 Other analytic theory
 - B99 None of the above, but in this section
- 12Cxx Finite fields and finite commutative rings**
 - C05 Polynomials
 - C10 Linear sequences
 - C15 Arithmetic
 - C20 Cyclotomy
 - C25 Exponential sums
 - C30 Structure theory
 - C99 None of the above, but in this section
- 12Dxx Real and complex fields**
 - D05 Polynomials: factorization
 - D10 Polynomials: location of zeros [Algebraic
theorems; for the analytic theory, see
26A78, 30A08.]
 - D15 Formally real fields
 - D99 None of the above, but in this section
- 12Exx General field theory**
 - E05 Polynomials (irreducibility, etc.)

A14

- E10 Special polynomials
- E99 None of the above, but in this section
- 12Fxx Field extensions**
 - F05 Algebraic extensions
 - F10 Separable extensions, Galois theory
 - F15 Inseparable extensions, derivations
 - F20 Transcendental extensions
 - F99 None of the above, but in this section
- 12Gxx Homological methods**
 - G05 Galois cohomology [See also 12A60,
18H10.]
 - G10 Cohomological dimension
 - G99 None of the above, but in this section
- 12Hxx Differential and difference algebra**
 - H05 Differential algebra
 - H10 Difference algebra
- 12Jxx Topological fields**
 - J05 Normed fields
 - J10 Valued fields
 - J15 Ordered fields
 - J20 General valuation theory
 - J99 None of the above, but in this section
- 12K05 Near-fields and other generalizations**
- 12Lxx Connections with logic**
 - L05 Decidability
 - L10 Ultraproducts
 - L15 Nonstandard arithmetic [See also 02H25.]
 - L99 None of the above, but in this section

13—XX COMMUTATIVE RINGS AND ALGEBRAS

- (For finite commutative rings, see 12Cxx.)
- 00 Difficult to classify at the second level
(must also be assigned at least one other
classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys,
etc.)
- 03 Historical
- 04 Explicit machine computation and pro-
grams (not the theory of computation or
programming)
- 13Axx General commutative ring theory**
 - A05 Divisibility
 - A10 Radical theory
 - A15 Ideals, prime ideals, valuations and
generalizations
 - A20 Brauer group [See also 16A16.]
 - A99 None of the above, but in this section
- 13Bxx Ring extensions and related topics**
 - B05 Galois theory
 - B10 Automorphisms and derivations
 - B15 Ramification theory
 - B20 Integral dependence; integral closure;
integrally closed rings, related rings
(Japanese, etc.)
 - B25 Polynomials over commutative rings
 - B99 None of the above, but in this section
- 13Cxx Theory of modules and ideals**
 - C05 Structure, classification theorems
 - C10 Special types (projective, injective, free,
flat, torsion, reflexive, etc.) [See also
18G05.]
 - C15 Dimension theory, depth, related rings
(catenary, etc.)
 - C99 None of the above, but in this section

- 13Dxx Homological methods** [For cohomology of rings and algebras, see 18H20.]
- D05 Homological dimension
 - D10 Deformations and infinitesimal methods
 - D15 Class group, Grothendieck group, K -theory [See also 18F25.]
 - D99 None of the above, but in this section
- 13Exx Chain conditions**
- E05 Noetherian rings
 - E10 Artin rings, finite dimensional algebras
 - E99 None of the above, but in this section
- 13Fxx Arithmetic rings**
- F05 Dedekind and Prüfer rings and their generalizations
 - F10 Principal ideal rings
 - F15 Factorial rings, unique factorization domains
 - F20 Polynomial rings [See also 10M05.]
 - F99 None of the above, but in this section
- 13G05 Integral domains**
- 13Hxx Local rings and semilocal rings**
- H05 Regular local rings
 - H10 Special types (Macaulay, Gorenstein, etc.)
 - H15 Multiplicity theory and related topics
 - H99 None of the above, but in this section
- 13Jxx Topological rings** [For ordered rings, see 06A70; see also 16A80.]
- J05 Power series rings
 - J10 Complete rings
 - J15 Henselian rings
 - J20 Global topological rings
 - J99 None of the above, but in this section
- 13K05 Witt vectors and related rings**
- 13L05 Applications of logic to commutative algebra**

14—XX ALGEBRAIC GEOMETRY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

14Axx Foundations

- A05 Relevant commutative algebra [See also 13—XX.]
- A10 Varieties
- A15 Schemes
- A20 Generalizations (algebraic spaces, motifs)
- A25 Elementary questions
- A99 None of the above, but in this section

14Bxx Local theory

- B05 Singularities [See also 14E15.]
- B10 Infinitesimal methods
- B15 Local cohomology [See also 18F20.]
- B20 Formal neighborhoods
- B99 None of the above, but in this section

14Cxx Cycles and subschemes

- C05 Parametrization (Chow and Hilbert schemes)
- C10 Equivalence relations
- C15 Rational equivalence rings, intersection theory

- C20 Divisors, linear systems, Picard groups
- C25 Zero-cycles
- C30 Transcendental methods, Hodge theory
- C99 None of the above, but in this section

14Dxx Families, fibrations

- D05 Structure of families (Picard-Lefschetz, Picard-Fuchs theory, etc.)
- D10 Arithmetic ground fields (finite, local, global)
- D15 Formal methods; deformations [See also 32Gxx.]
- D20 Algebraic moduli problems [For analytic moduli problems, see 32G13.]
- D99 None of the above, but in this section

14Exx Mappings and correspondences

- E05 Rational maps, birational correspondences
- E10 General correspondences
- E15 Global theory of singularities, resolution
- E20 Coverings, fundamental group
- E25 Embeddings
- E30 Minimal models
- E35 Results in dimension ≤ 3
- E99 None of the above, but in this section

14Fxx Cohomology theory [See also 13Dxx, 18—XX.]

- F05 Vector bundles, sheaves, related constructions
- F10 Differentials and other special sheaves
- F15 Serre cohomology, K -theory [See also 13D15, 18F25.]
- F20 Grothendieck cohomology and topology
- F25 Classical real and complex cohomology
- F30 p -adic cohomology
- F35 Homotopy theory
- F99 None of the above, but in this section

14Gxx Arithmetic problems [For complex multiplication, see 10D25, 14K22.]

- G05 Rationality questions
- G10 Zeta-functions and related questions
- G13 Weil-Tate conjectures
- G15 Finite ground fields
- G20 p -adic ground fields (local fields)
- G25 Global ground fields
- G99 None of the above, but in this section

14Hxx Curves

- H05 Algebraic function fields
- H10 Families, moduli (algebraic)
- H15 Families, moduli (analytic) [See also 32G15.]
- H20 Singularities, local rings
- H25 Arithmetic ground fields
- H30 Coverings, fundamental group
- H35 Correspondences
- H40 Jacobians [See also 32G20.]
- H45 Special curves
- H99 None of the above, but in this section

14Jxx Surfaces and 3-dimensional varieties

- J05 Picard group
- J10 Families, moduli, classification: algebraic theory
- J15 Singularities, moduli, classification: analytic theory [See also 32J15.]
- J20 Arithmetic ground fields
- J25 Special surfaces
- J99 None of the above, but in this section

14Kxx Abelian varieties and schemes

- K05 Algebraic theory
- K10 Algebraic moduli, classification

- K15 Arithmetic ground fields
- K20 Analytic theory
- K22 Complex multiplication [See also 10D25.]
- K25 θ -functions
- K30 Picard schemes, higher Jacobians
- K99 None of the above, but in this section
- 14Lxx Group schemes [For linear algebraic groups, see 20Gxx.]
 - L05 Formal groups, p -divisible groups
 - L10 Group varieties
 - L15 Group schemes
 - L20 Finite group schemes
 - L25 Pro-algebraic group schemes
 - L99 None of the above, but in this section
- 14Mxx Special varieties
 - M05 Varieties defined by ring conditions (factorial, Macaulay)
 - M10 Complete intersections
 - M15 Grassmannians, homogeneous spaces
 - M20 Rational varieties
 - M99 None of the above, but in this section
- 14Nxx Classical methods and problems
 - N05 Projective techniques
 - N10 Enumerative problems
 - N99 None of the above, but in this section
- 15—XX LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY (finite and infinite)
 - 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 - 01 Elementary exposition (collegiate level)
 - 02 Advanced exposition (research surveys, etc.)
 - 03 Historical
 - 04 Explicit machine computation and programs (not the theory of computation or programming)
 - A03 Vector spaces, linear dependence, rank
 - A06 Linear equations
 - A09 Matrix inversion, generalized inverses
 - A12 Conditioning of matrices [See also 65F35.]
 - A15 Determinants, permanents, other special matrix functions
 - A18 Eigenvalues and eigenvectors
 - A21 Canonical forms, reductions, classification
 - A24 Matrix equations and identities
 - A27 Commutativity
 - A30 Algebraic systems of matrices [See also 16A42, 20Gxx, 20Hxx.]
 - A33 Matrices over special rings (quaternions, finite fields, etc.)
 - A36 Matrices of integers [See also 10M20.]
 - A39 Linear inequalities
 - A42 Inequalities involving eigenvalues and eigenvectors
 - A45 Miscellaneous inequalities involving matrices
 - A48 Positive matrices and their generalizations
 - A51 Stochastic matrices
 - A54 Matrices over function rings in one or more variables
 - A57 Other types of matrices (hermitian, skew-hermitian, etc.)
 - A60 Norms of matrices, applications of functional analysis to matrix theory [See also 65F35, 65J05.]

- A63 Quadratic and bilinear forms, inner products
- A66 Clifford algebras
- A69 Multilinear algebra, tensor products
- A72 Vector and tensor algebra, theory of invariants
- A75 Exterior algebra, Grassmann algebras
- A78 Other algebras built from modules

16—XX ASSOCIATIVE RINGS AND ALGEBRAS [For the commutative case, see 13—XX.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A02 Integral domains, unique factorization domains (noncommutative)
- A04 Noncommutative principal ideal rings, rings with a division algorithm
- A06 Free algebras, free ideal rings (fir) and their generalizations [See also tensor algebra in 15A72.]
- A08 Rings of quotients, noncommutative localization
- A10 Noncommutative local rings
- A12 Prime and semiprime rings
- A14 Noncommutative analogues of Dedekind and Prüfer domains
- A16 Separable algebras, Azumaya algebras and their generalizations [See also 13A20.]
- A18 Orders, arithmetic in algebras
- A20 Primitive and semiprimitive rings
- A21 Radical theory
- A22 Nil, nilpotent and radical rings
- A24 Hopf algebras, algebraic theory [See also 57F05.]
- A26 Group rings [See also 20C05.]
- A28 Rings with involution [See also 46Kxx.]
- A30 von Neumann regular rings and their generalizations [See also 06A30.]
- A32 Idempotents in rings
- A34 Rings with annihilator conditions
- A36 Frobenius algebras, quasi-Frobenius rings and their generalizations
- A38 Rings with polynomial identity
- A40 Division rings, simple and semisimple Artin rings
- A42 Rings of linear transformations, matrix rings, infinite matrix rings
- A44 Finite rings [See also 12Cxx.]
- A46 Chain conditions; finite dimensional algebras, Artin rings, Noetherian rings
- A48 Structure, classification
- A49 Duality theory
- A50 Projective and flat modules and generalizations
- A52 Injective modules, self-injective rings and generalizations
- A54 Grothendieck groups of rings, K -theory of noncommutative rings [See also 18F25.]

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- A56 Extension theory
- A58 Deformation theory of rings and algebras
[See also 13D10, 32Gxx.]
- A60 Homological dimension
- A62 Homological methods [For cohomology
of algebras and rings, see 18H15.]
- A64 Modules and representations
- A66 Ideal theory, prime ideals and their
generalizations
- A68 Lie, Jordan and other nonassociative
structures on associative rings
- A70 Commutativity theorems
- A72 Automorphisms, derivations
- A74 Galois theory
- A76 Near rings
- A78 Semirings and other generalizations of
rings
- A80 Topological rings and semirings [For
ordered rings, see 06A70; see also 13Jxx.]

17—XX NONASSOCIATIVE RINGS AND ALGEBRAS

- 00 Difficult to classify at the second level
(must also be assigned at least one other
classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys,
etc.)
- 03 Historical
- 04 Explicit machine computation and pro-
grams (not the theory of computation or
programming)
- 17Axx General nonassociative algebras
 - A05 Power-associative
 - A10 Commutative power-associative
 - A15 Noncommutative Jordan algebras
 - A20 Flexible algebras
 - A25 Nodal algebras
 - A30 Algebras satisfying other identities
 - A99 None of the above, but in this section
- 17Bxx Lie algebras [For Lie groups, see 22Exx.]
 - B05 Structure theory
 - B10 Representations, algebraic theory
(weights)
 - B15 Representations, analytic theory
 - B20 Simple, semisimple, reductive algebras
(roots)
 - B25 Exceptional algebras
 - B30 Solvable, nilpotent algebras
 - B35 Universal enveloping algebras
 - B40 Automorphisms, derivations, other
operators
 - B45 Lie algebras of linear algebraic groups
[See also 14Lxx and 20Gxx.]
 - B50 Lie p -algebras and bialgebras (Hopf
algebras) of formal groups [See also
14L05, 16A24.]
 - B55 Homological methods in Lie algebra [For
homology of Lie algebras, see 18H25.]
 - B60 Lie rings associated with other structures
(associative, Jordan, etc.) [See also
15A30, 16A68, 17C40, 17C50.]
 - B65 Infinite dimensional Lie algebras [See
also 22E65.]
 - B99 None of the above, but in this section
- 17Cxx Jordan algebras (commutative)
 - C05 Identities
 - C10 Structure theory

- C15 Representations
- C20 Simple, semisimple algebras
- C25 Universal enveloping algebras
- C30 Automorphisms, derivations, other
operators
- C35 Formally real domains of positivity
[See also 32Nxx.]
- C40 Exceptional Jordan algebras and asso-
ciated Lie groups
- C45 Homological methods in Jordan algebras
[For homology of Jordan algebras, see
18H30.]
- C50 Jordan rings associated with other
structures [See also 16A68, 17B60.]
- C99 None of the above, but in this section
- 17D05 Alternative rings
- 17E05 Other nonassociative rings and algebras

18—XX CATEGORY THEORY, HOMOLOGICAL ALGEBRA

- 00 Difficult to classify at the second level
(must also be assigned at least one other
classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys,
etc.)
- 04 Explicit machine computation and pro-
grams (not the theory of computation or
programming)
- 18Axx General theory of categories and functors
 - A05 Definitions, generalizations
 - A10 Graphs, groupoids, neofunctors [See
also 20Lxx.]
 - A15 Foundations, relations to logic and de-
ductive systems [See also 02—XX.]
 - A20 Epimorphisms, monomorphisms, special
classes of morphisms, null morphisms,
factorization (bicatagories)
 - A25 Functor categories, comma categories
 - A30 Limits and colimits (products, sums,
pushouts, fiber products, equalizers,
kernels, ends and coends, etc.)
 - A35 Complete categories, completions
 - A40 Adjoint functors (representable functors,
universal constructions, reflexive sub-
categories, etc.), constructions of ad-
joints (Kan extensions, etc.)
 - A99 None of the above, but in this section
- 18Bxx Special categories
 - B05 Category of sets, characterizations
 - B10 Category of relations, additive relations,
semigroups [See also 20Mxx.]
 - B15 Embedding theorems, universal cate-
gories [See also 18E20.]
 - B20 Categories of machines, automata, oper-
ative categories [See also 02F10, 68A25,
94A30, 94A35.]
 - B99 None of the above, but in this section
- 18Cxx Categories and algebraic theories
 - C05 Equational categories [See also 02—XX.]
 - C10 Theories (e.g. algebraic theories), struc-
ture, and semantics
 - C15 Triples (= standard construction, monad
or triad), algebras for a triple, homology
and derived functors for triples [See
also 18Gxx.]
 - C99 None of the above, but in this section

18Dxx Categories with structure

- D05 Double categories, 2-categories, bicategories, hypercategories
- D10 Monoidal categories (= multiplicative categories)
- D15 Closed categories (closed monoidal and cartesian closed categories, etc.)
- D20 Enriched categories (over closed or monoidal categories)
- D25 Strong functors, strong adjunctions
- D30 Fibered categories
- D35 Structured objects in a category (group objects, etc.)
- D99 None of the above, but in this section

18Exx Abelian categories

- E05 Preadditive, additive categories
- E10 Exact categories, abelian categories
- E15 Grothendieck categories
- E20 Embedding theorems [See also 18B10.]
- E25 Derived functors and satellites
- E30 Derived categories, triangulated categories
- E35 Localization of categories
- E40 Torsion theories, radicals
- E99 None of the above, but in this section

18Fxx Categories and geometry

- F05 Local categories and functors
- F10 Grothendieck topologies [See also 14F20.]
- F15 Abstract manifolds and fiber bundles [See also 55Fxx, 57Bxx.]
- F20 Presheaves and sheaves [See also 14F05, 32C35, 32L10, 55B30.]
- F25 Algebraic K-theory [See also 13D15, 14F15, 16A54.]
- F30 Grothendieck groups [See also 13D15, 16A54.]
- F99 None of the above, but in this section

18Gxx Homological algebra

- G05 Projectives and injectives [See also 13C10, 16A50, 16A52.]
- G10 Resolutions; derived functors [See also 18E25.]
- G15 Ext and Tor, generalizations, Künneth formula [See also 55J25.]
- G20 Homological dimension [See also 13Dxx, 16A62.]
- G25 Relative homological algebra, projective classes
- G30 Simplicial sets, simplicial objects (in a category) [See also 55J10.]
- G35 Chain complexes [See also 18E30, 55J15.]
- G40 Spectral sequences, hypercohomology [See also 55Hxx.]
- G99 None of the above, but in this section

18Hxx Cohomology of specified algebraic systems

- H05 General methods; models [See also 18E25, 18G25.]
- H10 Cohomology and homology of groups [See also 20Jxx.]
- H15 Cohomology and homology of algebras and rings [See also 16A62.]
- H20 Cohomology and homology of commutative rings [See also 13Dxx.]
- H25 Cohomology of Lie algebras [See also 17B55.]
- H30 Cohomology of Jordan algebras [See also 17C45.]

H35 Cohomology of other nonassociative algebras [See also 17-XX.]

H40 Cohomology of other algebraic systems

H99 None of the above, but in this section

20-XX GROUP THEORY AND GENERALIZATIONS [For ordered groups, see 06A55.]

—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

—01 Elementary exposition (collegiate level)

—02 Advanced exposition (research surveys, etc.)

—03 Historical

—04 Explicit machine computation and programs (not the theory of computation or programming)

20Axx Foundations

A05 Axiomatics and elementary properties

A10 Metamathematical considerations [For word problems, see 20F10.]

A99 None of the above, but in this section

20Bxx Finite permutation groups

- B05 General theory
- B10 Characterization theorems
- B15 Uniprimitive groups
- B20 Multiply transitive groups
- B25 Automorphism groups of algebraic, geometric, or combinatorial structures [See also 05Bxx, 20G40, 20H30, 50-XX.]
- B99 None of the above, but in this section

20Cxx Representation theory of finite groups

- C05 Group rings and their modules [See also 16A26.]
- C10 Integral representations
- C15 Ordinary representations and characters
- C20 Modular representations and characters
- C25 Projective representations and multipliers
- C30 Representations of symmetric groups and other special groups
- C35 Applications to physics
- C99 None of the above, but in this section

20Dxx Abstract finite groups

- D05 Simple groups [See also 20G40.]
- D10 Solvable groups
- D15 Nilpotent groups, p -groups
- D20 Sylow subgroups, r -groups
- D25 Special subgroups (Fratini, Fitting, etc.)
- D30 Series and lattices of subgroups
- D35 Subnormal subgroups
- D40 Products of subgroups
- D45 Automorphisms
- D99 None of the above, but in this section

20Exx Infinite groups

- E05 Free nonabelian groups
- E10 Varieties of groups
- E15 Chains of subgroups (solvable groups, nilpotent groups, etc.)
- E20 Special subgroups other than commutator types
- E25 Local properties, residual properties
- E30 Free products, generalized properties
- E35 Representation in associative rings, Lie rings, combinatorial structures, etc.
- E40 Fundamental groups, etc. [See also 55A05, 57Exx.]
- E99 None of the above, but in this section

- 20Fxx General groups, finite or infinite**
 F05 Generators and relations
 F10 Word problems
 F15 Structure theorems
 F20 Limits, profinite groups
 F25 Extensions, wreath products, other compositions
 F30 Subgroup lattices, maximal subgroups, subnormal subgroups, etc.
 F35 Commutator subgroups and their generalizations
 F40 Associated Lie structures
 F45 Engel conditions
 F50 Periodic groups
 F55 Automorphisms
 F99 None of the above, but in this section
- 20Gxx Linear algebraic groups (classical groups)**
 [See also 10C30, 14—XX; for analytic methods on p -adic groups and adèle groups, see 22E55.]
 G05 Representation theory [For infinite dimensional representations, see 22E50.]
 G10 Cohomology theory
 G15 Linear algebraic groups over arbitrary fields
 G20 Linear algebraic groups over the reals, the complexes, the quaternions
 G25 Linear algebraic groups over local fields and their integers
 G30 Linear algebraic groups over global fields and their integers
 G35 Linear algebraic groups over adèles and other rings and schemes
 G40 Linear algebraic groups over finite fields
 G45 Applications to physics; explicit representations
 G99 None of the above, but in this section
- 20Hxx Other groups of matrices**
 H05 Unimodular groups, congruence subgroups
 H10 Fuchsian groups and their generalizations [See also 30A58, 32Nxx.]
 H15 Other geometric groups, including crystallographic groups [See also 50—XX.]
 H20 Other matrix groups over fields
 H25 Other matrix groups over rings
 H30 Other matrix groups over finite fields
 H99 None of the above, but in this section
- 20Jxx Connections with homological algebra and category theory**
 J05 Homological methods in group theory
 J10 Groups arising as cohomology groups
 J15 Category of groups
 J99 None of the above, but in this section
- 20Kxx Abelian groups**
 K05 Finitely generated groups
 K10 Torsion groups
 K15 Torsion free groups, finite rank
 K20 Torsion free groups, infinite rank
 K25 Direct sums, direct products, etc.
 K30 Automorphisms, homomorphisms, endomorphisms
 K35 Extensions
 K40 Homological and categorical methods [See also 18H10.]
 K45 Topological methods
 K99 None of the above, but in this section
- 20Lxx Groupoids (small categories in which all morphisms are isomorphisms)**
 L05 General theory
 L10 Connections with group theory
 L15 Connections with topology
 L99 None of the above, but in this section
- 20Mxx Semigroups**
 M05 Free semigroups, generators and relations, word problem
 M10 Structure theory, ideals, idempotents, etc.
 M15 Mappings of semigroups
 M20 Semigroups of transformations, etc. [See also 47D05.]
 M25 Semigroup rings, multiplicative semigroups of rings
 M30 Representation of semigroups
 M35 Semigroups in automata theory, linguistics, etc. [See also 02F10.]
 M99 None of the above, but in this section
- 20Nxx Other generalizations of groups**
 N05 Loops, quasigroups [See also 05Bxx.]
 N10 Ternary systems (heaps, semiheaps, heapoids, etc.)
 N15 n -ary systems
 N99 None of the above, but in this section
- 22—XX TOPOLOGICAL GROUPS, LIE GROUPS** [For transformation groups, see 54H15, 57Exx, 58—XX. For abstract harmonic analysis, see 43—XX.]
 —00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)
- 22Axx Topological algebraic systems** [For topological rings and fields, see 12Jxx, 13Jxx, 16A80; for dual spaces of operator algebras and topological groups, see 46L05.]
 A05 Structure of general topological groups
 A10 Analysis on general topological groups
 A15 Structure of topological semigroups
 A20 Analysis on topological semigroups
 A25 Representations of general topological groups and semigroups
 A30 Representations of other topological algebraic systems
 A99 None of the above, but in this section
- 22Bxx Locally compact abelian groups (LCA groups)**
 B05 General properties and structure of LCA groups
 B10 Structure of group algebras of LCA groups
 B99 None of the above, but in this section
- 22C05 Compact groups**
- 22Dxx Locally compact groups and their algebras**
 D05 General properties and structure of locally compact groups
 D10 Unitary representations of locally compact groups
 D12 Other representations of locally compact groups

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- D15 Group algebras of locally compact groups
- D20 Representations of group algebras
- D25 C^* -algebras and W^* -algebras arising from group representations
- D30 Induced representations
- D35 Duality theorems
- D40 Ergodic theory on groups [See also 28A65.]
- D45 Automorphism groups of locally compact groups
- D99 None of the above, but in this section
- 22Exx Lie groups** [For the topology of Lie groups and homogeneous spaces, see 57Exx, 57Fxx; for the analysis thereof, see 43A90, 43A85, 43A90.]
 - E05 Local Lie groups [See also 34—XX, 35—XX, 58H05.]
 - E10 General properties and structure of complex Lie groups
 - E15 General properties and structure of real Lie groups
 - E20 General properties and structure of other Lie groups
 - E25 Nilpotent and solvable Lie groups
 - E30 Analysis on real and complex Lie groups [See also 33A75, 43—XX.]
 - E35 Analysis on p -adic Lie groups [See also 12A85.]
 - E40 Discrete subgroups of Lie groups [See also 32Nxx.]
 - E43 Structure and representation of the Lorentz group
 - E45 Representations of Lie and linear algebraic groups: analytic methods [For the purely algebraic theory, see 20G05.]
 - E50 Representations of Lie and linear algebraic groups over local fields: analytic methods [For the purely algebraic theory, see 20G05.]
 - E55 Representations of Lie and linear algebraic groups over global fields and adèle rings: analytic methods [For the purely algebraic theory, see 20G05.]
 - E60 Lie algebras of Lie groups [For the algebraic theory of Lie algebras, see 17Bxx.]
 - E65 Infinite dimensional Lie groups and their Lie algebras [See also 17B65, 58H05.]
 - E70 Applications of Lie groups to physics; explicit representations [See also 81—XX.]
 - E99 None of the above, but in this section
- 26—XX REAL FUNCTIONS** [See also 54C30.]
 - 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 - 01 Elementary exposition (collegiate level)
 - 02 Advanced exposition (research surveys, etc.)
 - 03 Historical
 - 04 Explicit machine computation and programs (not the theory of computation or programming)
 - A03 Foundations: limits and generalizations, elementary topology of the line
 - A06 One-variable calculus
 - A09 Elementary functions
 - A12 Rate of growth of functions, orders of infinity, slowly increasing functions [See also 26A48.]
 - A15 Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.) [For properties determined by Fourier coefficients, see 42A16; for those determined by approximation properties, see 41A25.]
 - A16 Lipschitz (Holder) classes
 - A18 Iteration [See also 39A20.]
 - A21 Classification of real functions; Baire classification of sets and functions [See also 04A15, 28A05, 54C50.]
 - A24 Differentiation (functions of one variable): general theory, generalized derivatives, mean-value theorems [See also 28A15.]
 - A27 Nondifferentiability (nondifferentiable functions, points of nondifferentiability), discontinuous derivatives
 - A30 Singular functions, Cantor functions, functions with other special properties
 - A33 Fractional derivatives and integrals
 - A36 Antidifferentiation
 - A39 Denjoy and Perron integrals, other special integrals
 - A42 Integrals of Riemann, Stieltjes and Lebesgue type [See also 28—XX.]
 - A45 Functions of bounded variation, generalizations
 - A48 Monotonic functions, generalizations
 - A51 Convexity, generalizations
 - A54 Several variables: continuity and differentiation questions
 - A57 Several variables: implicit function theorems, Jacobians, transformations with several variables
 - A60 Calculus of vector functions
 - A63 Integration: length, area, volume
 - A66 Integral formulas (Stokes, Gauss, Green, etc.)
 - A69 Special properties of functions of several variables, Hölder conditions, etc.
 - A72 Superposition of functions
 - A75 Polynomials (analytic properties, inequalities, etc.)
 - A78 Polynomials (location of zeros) [See also 12D10, 30A08, 65H05.]
 - A81 Rational functions
 - A82 Inequalities for trigonometric functions and polynomials
 - A84 Inequalities involving derivatives and differential and integral operators
 - A86 Inequalities for sums, series and integrals
 - A87 Other analytical inequalities
 - A90 Real-analytic functions
 - A93 C^∞ -functions, quasi-analytic functions
 - A96 Calculus of functions on infinite-dimensional spaces
 - A98 Nonstandard analysis [See also 02H25.]
- 28—XX MEASURE AND INTEGRATION** [For analysis on manifolds, see 58—XX.]
 - 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Classes of sets (Borel fields, σ -rings, etc.) measurable sets, Suslin sets, analytic sets [See also 04A15, 26A21, 54H05.]
- A10 Real- or complex-valued set functions, contents, measures, outer measures, capacities, etc.
- A15 Abstract differentiation theory, differentiation of set functions [See also 26A24.]
- A20 Measurable and nonmeasurable functions, sequences of measurable functions, modes of convergence
- A25 Integration with respect to measures and other set functions
- A30 Integration theory via linear functionals (Radon measures, Daniell integrals, etc.)
- A35 Measures and integrals in product spaces
- A40 Measures and integrals in function spaces and linear spaces, Wiener measure [See also 46Gxx.]
- A45 Vector-valued measures and integrals, integration of vector-valued functions [See also 46G10.]
- A50 Integration and disintegration of measures [For lifting theory, see 46G15.]
- A55 Measures and integrals with values in general ordered systems
- A60 Measures on Boolean rings, measure algebras [See also 54H10.]
- A65 Measure-preserving transformations, flows (dynamical systems), measure-theoretic ergodic theory [See also 47A35, 54H20, 58Fxx.]
- A70 Invariant measures, Haar measure [See also 43A05.]
- A75 Length, area, volume, other geometric measure theory [See also 26A63, 49F20.]

30—XX FUNCTIONS OF A COMPLEX VARIABLE [For analysis on manifolds, see 58—XX.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A02 Monogenic properties of complex functions (including polygenic and areolar monogenic functions)
- A04 Inequalities in the complex domain
- A06 Polynomials
- A08 Zeros of polynomials, rational functions, and other analytic functions (e.g. zeros of functions with bounded Dirichlet integral) [For algebraic theory, see 12D10; for real methods, see 26A78.]

- A10 Power series (including lacunary series)
- A12 Boundary behavior of power series, over-convergence
- A14 Analytic continuation
- A16 Dirichlet series and other series expansions, exponential series [See also 40—XX, 41—XX, 42—XX.]
- A18 Completeness problems, closure of a system of functions
- A20 Functional equations in the complex domain, iteration and composition of analytic functions [See also 34A20, 39A15.]
- A22 Continued fractions [See also 10A30, 40A15.]
- A24 Conformal mappings of special domains
- A26 Covering theorems in conformal mapping theory
- A28 Numerical methods in conformal mapping theory
- A30 General theory of conformal mappings
- A31 Kernel functions and applications
- A32 Special classes of univalent and multivalent functions (star-like, convex, bounded rotation, etc.)
- A34 Coefficient problems for univalent and multivalent functions
- A36 General theory of univalent and multivalent functions
- A38 Extremal problems, variational methods
- A40 Extremal problems, other methods
- A42 Maximum principle; Schwarz' Lemma, Lindelöf principle, analogues and generalizations
- A44 Capacity and harmonic measure in the complex plane [See also 31A15.]
- A46 Compact Riemann surfaces and uniformization [See also 14H15, 32G15.]
- A48 Classification theory of Riemann surfaces
- A50 Ideal boundary theory
- A52 Differentials on Riemann surfaces
- A58 Discontinuous groups and automorphic functions [See also 10Dxx, 20H10 and 32Nxx.]
- A60 Quasiconformal mappings and functions
- A62 Representations of entire functions by series and integrals
- A64 Special classes of entire functions and growth estimates
- A66 Entire functions, general theory
- A68 Meromorphic functions, general theory
- A70 Distribution of values, Nevanlinna theory
- A72 Cluster sets, prime ends, boundary behavior
- A74 Normal functions, normal families
- A76 Blaschke products, bounded characteristic, bounded functions, functions with positive real part
- A78 H^p , quasianalytic and other classes of functions
- A80 Moment problems, interpolation problems
- A82 Approximation in the complex domain
- A84 Asymptotic representations in the complex domain
- A86 Integration, integrals of Cauchy type, integral representations of analytic functions [See also 45Exx.]

- A86 Boundary value problems
 A90 Topological function theory
 A91 Nonstandard function theory [See also 02H25.]
 A92 Generalized analytic functions
 A93 Pseudo-analytic functions
 A94 p -analytic functions
 A95 Discrete analytic functions
 A96 Other generalizations of analytic functions (including abstract-valued functions)
 A97 Functions of hypercomplex variables and generalized variables
 A98 Spaces and algebras of analytic functions [See also 46J15.]
- 31—XX POTENTIAL THEORY** [For probabilistic potential theory, see 60J45.]
 —00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)
- 31Axx Two-dimensional theory**
 A05 Harmonic, subharmonic, superharmonic functions
 A10 Integral representations
 A15 Potentials and capacity, harmonic measure, extremal length
 A20 Boundary behavior (Fatou type theorems, etc.)
 A25 Boundary value and inverse problems
 A30 Biharmonic, polyharmonic functions and equations, Poisson's equation
 A35 Connections with differential equations
 A99 None of the above, but in this section
- 31Bxx Higher dimensional theory**
 B05 Harmonic, subharmonic, superharmonic functions
 B10 Integral representations
 B15 Potentials and capacities, extremal length
 B20 Boundary value and inverse problems
 B25 Boundary behavior
 B30 Biharmonic and polyharmonic equations and functions
 B35 Connections with differential equations
 B99 None of the above, but in this section
- 31Cxx Other generalizations**
 C05 Harmonic, subharmonic, superharmonic functions
 C10 Pluriharmonic and plurisubharmonic functions [See also 32F05.]
 C15 Potentials and capacities
 C20 Discrete potential theory and numerical methods
 C25 Dirichlet spaces
 C99 None of the above, but in this section
- 31D05 Axiomatic potential theory**
- 32—XX SEVERAL COMPLEX VARIABLES AND ANALYTIC SPACES**
 —00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)
- 32Axx Holomorphic functions of several complex variables**
 A05 Power series, series of functions
 A07 Special domains (Reinhardt, Hartogs, tube domains, etc.)
 A10 Holomorphic functions
 A15 Entire functions
 A17 Normal families
 A20 Meromorphic functions
 A25 Integral representation and residue theory
 A30 Other generalizations of function theory of one complex variable [For functions of several hypercomplex variables, see 30A97.]
 A99 None of the above, but in this section
- 32Bxx Local analytic geometry** [See also 13—XX and 14—XX.]
 B05 Analytic algebras and generalizations, preparation theorems
 B10 Germs of analytic sets
 B15 Analytic subsets of affine space
 B20 Semi-analytic sets
 B99 None of the above, but in this section
- 32Cxx General theory of analytic spaces**
 C05 Real-analytic manifolds, real-analytic spaces
 C10 Complex manifolds [For almost complex manifolds, see 53C15.]
 C15 Complex spaces
 C20 Normal analytic spaces
 C25 Analytic subsets and submanifolds
 C30 Integration on analytic sets and spaces
 C35 Analytic sheaves and cohomology groups [See also 18F20, 55B30.]
 C40 Singularities
 C45 Modifications, resolution of singularities [See also 14E15.]
 C99 None of the above, but in this section
- 32Dxx Analytic continuation**
 D05 Domains of holomorphy
 D10 Envelopes of holomorphy
 D15 Continuation of analytic objects
 D20 Removable singularities
 D99 None of the above, but in this section
- 32Exx Holomorphic convexity**
 E05 Holomorphically convex complex spaces, reduction theory
 E10 Stein spaces, Stein manifolds
 E15 Runge pairs
 E20 Polynomial convexity
 E25 Algebras of holomorphic functions
 E30 Holomorphic and polynomial approximation
 E99 None of the above, but in this section

32Fxx Geometric convexity

- F05 Plurisubharmonic functions and generalizations [See also 31C10.]
- F10 q -convexity, q -concavity
- F15 Pseudoconvex domains
- F99 None of the above, but in this section [For the theory of the $\bar{\partial}$ -Neumann problem on pseudoconvex domains, see 35N15.]

32Gxx Deformations of analytic structures

- G05 Deformations of complex structures [See also 13D10, 16A58, 58H05.]
- G10 Deformations of submanifolds and subspaces
- G13 Analytic moduli problems [For algebraic moduli problems, see 14D20.]
- G15 Moduli of Riemann surfaces, Teichmüller theory [See also 30A46.]
- G20 Period matrices
- G99 None of the above, but in this section

32Hxx Analytic mappings

- H05 Representative domains
- H10 Bergman kernel function
- H15 Invariant metrics and pseudodistances
- H20 Hyperbolic complex manifolds
- H25 Picard type theorems and generalizations
- H99 None of the above, but in this section

32Jxx Compact analytic spaces [For Riemann surfaces, see 14Hxx, 30A46.]

- J05 Compactification
- J10 Algebraic dependence theorems
- J15 Compact surfaces [See also 14Jxx.]
- J20 Algebraicity criteria
- J25 Transcendental methods of algebraic geometry [See also 14C30.]
- J99 None of the above, but in this section

32Kxx Generalizations of analytic spaces

- K05 Banach analytic spaces [See also 58Bxx.]
- K10 Nonarchimedean analytic spaces
- K15 Differentiable functions on analytic spaces, differentiable spaces [See also 58C25.]
- K99 None of the above, but in this section

32Lxx Holomorphic fiber spaces [See also 55Fxx.]

- L05 Holomorphic fiber bundles and generalizations
- L10 Sheaves and cohomology of sections of holomorphic vector bundles [See also 18F20, 55B30.]
- L99 None of the above, but in this section

32Mxx Complex spaces with a group of automorphisms

- M05 Complex Lie groups, automorphism groups of complex spaces [See also 22E10.]
- M10 Homogeneous complex manifolds [See also 57F15.]
- M15 Hermitian symmetric spaces, bounded symmetric domains [See also 22E10, 22E40, 53C35, 57F15.]
- M99 None of the above, but in this section

32Nxx Automorphic functions [See also 10Dxx, 20H10, 22E40, 30A58.]

- N05 General theory of automorphic functions of several complex variables
- N10 Automorphic forms
- N15 Automorphic functions in symmetric domains
- N99 None of the above, but in this section

33—XX SPECIAL FUNCTIONS [33—XX deal with the properties of functions as functions. General systems of orthogonal functions are treated in 42A52. Expansions in orthogonal functions are treated in 42A56.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A10 Exponential and trigonometric functions
- A15 Gamma and beta functions
- A20 Error function, probability integral
- A25 Elliptic functions and integrals
- A30 Hypergeometric functions of one and several variables, generalizations
- A35 E -functions, G -functions, etc.
- A40 Cylindrical functions, Bessel functions
- A45 Spherical functions (Legendre polynomials and functions, spherical harmonics), ultraspherical polynomials
- A50 Gegenbauer functions
- A55 Lamé, Mathieu, spheroidal wave functions
- A60 Other wave functions
- A65 Orthogonal special functions and polynomials (Chebyshev, Hermite, Jacobi, Laguerre, etc.)
- A70 Other special functions
- A75 Special functions and Lie groups

34—XX ORDINARY DIFFERENTIAL EQUATIONS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

34Axx General theory

- A05 Solutions in closed form, integration by quadratures, reduction of differential equations
- A10 Initial value problems: general existence and uniqueness theorems; continuous dependence of solutions on parameters, initial conditions and boundary conditions
- A15 Initial value problems: continuation of solutions
- A20 Differential equations in the complex domain [See also 30A70.]
- A25 Analytical theory: series, transformations, transforms, operational calculus, etc. [See also 44—XX, 47E05.]
- A30 Linear equations and systems
- A35 Differential equations of infinite order
- A40 Differential inequalities
- A45 Theoretical approximation of solutions

- A50 Numerical approximation of solutions
[For numerical analysis, see 65Lxx.]
- A99 None of the above, but in this section
- 34Bxx Boundary value problems**
- B05 Linear equations
- B10 Multipoint boundary value problems
- B15 Nonlinear boundary value problems
- B20 Weyl theory and its generalizations
- B25 Spectral theory, Sturm-Liouville, and scattering theory; eigenfunctions, eigenvalues, and expansions [See also 42—XX, 43—XX, 47Axx, 47Bxx, 47E05.]
- B30 Special equations (Mathieu, Hill, Bessel, etc.) [See also 33—XX.]
- B99 None of the above, but in this section
- 34Cxx Qualitative theory**
- C05 Limit cycles, singular points
- C10 Zeros, disconjugacy, growth, boundedness, oscillation and comparison of solutions
- C15 Nonlinear oscillations
- C20 Transformation and reduction of equations and systems
- C25 Periodic and almost periodic solutions
- C30 Manifolds of solutions, averaging method [See also 47H10, 58Fxx.]
- C35 Dynamical systems [See also 58Fxx, 70—XX.]
- C40 Equations and systems on manifolds [See also 58Fxx, 58Gxx.]
- C99 None of the above, but in this section
- 34Dxx Stability theory [See also 58F10, 93Dxx.]**
- D05 Asymptotic properties, characteristic exponents
- D10 Perturbations
- D15 Singular perturbations
- D20 Ljapunov stability
- D25 Popov-type stability
- D30 Structural stability and analogous concepts [See also 58Fxx.]
- D35 Stability of manifolds of solutions
- D99 None of the above, but in this section
- 34Exx Asymptotic theory**
- E05 Asymptotic expansions
- E10 Perturbations
- E15 Singular perturbations, general theory
- E20 Singular perturbations, turning point theory, WKB-methods
- E99 None of the above, but in this section
- 34F05 Equations and systems with randomness [See also 60K05, 93Exx.]**
- 34G05 Differential equations in Banach and other abstract spaces [See also 47Bxx.]**
- 34H05 Control problems [See also 49—XX, 93—XX.]**
- 34Jxx Functional differential equations**
- J05 General theory
- J10 Differential-difference equations
- J99 None of the above, but in this section
- 34Kxx Functional-differential equations with retarded arguments, functional-differential equations with deviating arguments**
- K05 General theory
- K10 Boundary value problems
- K15 Qualitative theory
- K20 Stability theory
- K25 Asymptotic theory
- K99 None of the above, but in this section

35—XX PARTIAL DIFFERENTIAL EQUATIONS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- 35Axx General theory**
- A05 General existence and uniqueness theorems
- A10 Cauchy-Kowalewski theorems
- A15 Variational methods
- A20 Analytic methods, singularities
- A22 Transform methods
- A25 Other special methods
- A30 Geometric theory, characteristics, transformations
- A35 Theoretical approximation to solutions
- A40 Numerical approximation to solutions [For numerical analysis, see 65Mxx, 65Nxx, 65P05.]
- A99 None of the above, but in this section
- 35Bxx Qualitative properties of solutions**
- B05 Comparison theorems; oscillation, zeros and growth of solutions
- B10 Periodic solutions
- B15 Almost periodic solutions
- B20 Perturbations
- B25 Singular perturbations
- B30 Dependence of solutions on initial and boundary data, parameters
- B35 Stability and control, boundedness [See also 93—XX.]
- B40 Asymptotic behavior of solutions
- B45 Differential inequalities, a priori estimates
- B99 None of the above, but in this section
- 35Cxx Representations of solutions**
- C05 Solutions in closed form
- C10 Series solutions, expansion theorems
- C15 Integral representations
- C99 None of the above, but in this section
- 35Dxx Generalized solutions**
- D05 Existence of generalized solutions
- D10 Regularity of generalized solutions
- D99 None of the above, but in this section
- 35Exx Equations and systems with constant coefficients [See also 35N05.]**
- E05 Fundamental solutions
- E10 Convexity properties
- E15 Initial value problems
- E99 None of the above, but in this section
- 35Fxx General first order equations and systems**
- F05 Linear equations and systems, general
- F10 Initial value problems for linear equations and systems
- F15 Boundary value problems for linear equations and systems
- F20 Nonlinear equations and systems, general
- F25 Initial value problems for nonlinear equations and systems
- F30 Boundary value problems for nonlinear equations and systems
- F99 None of the above, but in this section

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 35Gxx** General higher order equations and systems
 G05 Linear equations and systems, general
 G10 Initial value problems for linear equations and systems
 G15 Boundary value problems for linear equations and systems
 G20 Nonlinear equations and systems, general
 G25 Initial value problems for nonlinear equations and systems
 G30 Boundary value problems for nonlinear equations and systems
 G99 None of the above, but in this section
- 35H05** Hypoelliptic equations and systems
- 35Jxx** Elliptic equations and systems
 J05 Laplace's equation, reduced wave equation (Helmholtz), Poisson's equation
 J10 Schrödinger operator [See also 47A40.]
 J15 Second order equations, general
 J20 Second order equations, variational methods
 J25 Second order equations, boundary value problems
 J30 Higher order equations, general
 J35 Higher order equations, variational problems
 J40 Higher order equations, boundary value problems
 J45 Systems, general
 J50 Systems, variational methods
 J55 Systems, boundary value problems
 J60 Nonlinear equations and systems
 J65 Nonlinear boundary value problems for linear equations and systems
 J67 Boundary values of solutions
 J70 Equations and systems of degenerate type
 J99 None of the above, but in this section
- 35Kxx** Parabolic equations and systems
 K05 Heat equation
 K10 Second order equations, general
 K15 Second order equations, initial value problems
 K20 Second order equations, boundary value problems
 K25 Higher order equations, general
 K30 Higher order equations, initial value problems
 K35 Higher order equations, boundary value problems
 K40 Systems, general
 K45 Systems, initial value problems
 K50 Systems, boundary value problems
 K55 Nonlinear equations and systems
 K60 Nonlinear boundary value problems for linear equations and systems
 K99 None of the above, but in this section
- 35Lxx** Hyperbolic equations and systems
 L05 Wave equation
 L10 Second order equations, general
 L15 Second order equations, initial value problems
 L20 Second order equations, boundary value problems
 L25 Higher order equations, general
 L30 Higher order equations, initial value problems
 L35 Higher order equations, boundary value problems

- L40 First order systems, general
 L45 First order systems, initial value problems
 L50 First order systems, boundary value problems
 L55 Higher order hyperbolic systems
 L60 Nonlinear equations and systems, general
 L65 Conservation laws [See also 76Axx.]
 L99 None of the above, but in this section
- 35M05** Equations and systems of mixed type (Tricomi, etc.) [For degenerate types, elliptic, see 35Jxx, hyperbolic, see 35Lxx, etc.]
- 35Nxx** Overdetermined systems
 N05 Constant coefficients
 N10 Variable coefficients, general
 N15 δ -Neumann problem and generalizations; formal complexes [See also 58G05.]
 N99 None of the above, but in this section
- 35Pxx** Spectral theory and eigenvalue problems [See also 47Axx, 47Bxx, 47F05.]
 P05 General spectral theory
 P10 Completeness of eigenfunctions, eigenfunction expansions
 P15 Estimation of eigenvalues, upper and lower bounds
 P20 Asymptotic distribution of eigenvalues and eigenfunctions
 P25 Scattering theory [See also 47A40.]
 P99 None of the above, but in this section
- 35Qxx** Special equations and problems [See also 35J05, 35K05, 35L05]
 Q05 Euler-Poisson-Darboux equation and generalizations
 Q10 Navier-Stokes equation [See also 76D05.]
 Q15 Riemann-Hilbert problems [See also 30A88, 31A25.]
 Q99 None of the above, but in this section
- 35Rxx** Miscellaneous topics [For equations on manifolds, see 58Gxx; for manifolds of solutions, see 58Bxx; for stochastic PDE's, see 60H15.]
 R05 Equations with discontinuous coefficients or data
 R10 Difference-partial differential equations, equations with time lag
 R15 Equations on function spaces
 R20 Operator equations, general [See also 34G05, 47A50, 47H15.]
 R25 Improperly posed problems
 R30 Inverse problems (undetermined coefficients, etc.)
 R99 None of the above, but in this section
- 35Sxx** Pseudodifferential operators [See also 47G05.]
 S05 General theory
 S10 Initial value problems
 S15 Boundary value problems
 S99 None of the above, but in this section

39—XX FINITE DIFFERENCES AND FUNCTIONAL EQUATIONS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)

- A05 Finite differences, general
- A10 Difference equations
- A15 Functional equations, general [For functional-differential equations, see 34Jxx.]
- A20 Classical functional equations
- A25 Linear and multilinear functional equations
- A30 Functional equations in several variables, systems
- A35 Matrix functional equations
- A40 Functional equations on abstract structures

40—XX SEQUENCES, SERIES, SUMMABILITY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- 40Axx Convergence and divergence of infinite limiting processes
 - A05 Convergence and divergence of series and sequences
 - A10 Convergence and divergence of integrals
 - A15 Convergence and divergence of continued fractions [See also 30A22.]
 - A20 Convergence and divergence of infinite products
 - A25 Approximation to limiting values (summation of series, etc.) [For the Euler-Maclaurin summation formula, see 65B15.]
 - A99 None of the above, but in this section
- 40B05 Multiple sequences and series
- 40Cxx General summability methods
 - C05 Matrix methods
 - C10 Integral methods
 - C15 Function theoretic methods (including power series methods and semicontinuous methods)
 - C99 None of the above, but in this section
- 40Dxx Direct theorems on summability
 - D05 General theorems
 - D10 Tauberian constants and oscillation limits
 - D15 Convergence factors and summability factors
 - D20 Summability and bounded fields of methods
 - D25 Inclusion and equivalence theorems
 - D99 None of the above, but in this section
- 40E05 Tauberian theorems
- 40F05 Absolute and strong summability
- 40Gxx Special methods of summability
 - G05 Cesàro, Euler, Nörlund and Hausdorff methods
 - G10 Abel, Borel and power series methods
 - G99 None of the above, but in this section
- 40H05 Functional analytic methods in summability
- 40J05 Summability in abstract structures [See also 43A55.]

41—XX APPROXIMATIONS AND EXPANSIONS [For all

approximation theory in the complex domain, see 30A80 and 30A82; for all trigonometric approximation and interpolation, see 42A08, 42A12.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Interpolation [See also 42A12 and 65D05.]
- A10 Approximation by polynomials [For approximation by trigonometric polynomials, see 42A08.]
- A15 Spline approximation
- A20 Approximation by rational functions
- A25 Rate of convergence, degree of approximation
- A30 Approximation by other special function classes
- A35 Approximation by operators (in particular, by integral operators)
- A40 Saturation classes
- A45 Approximation by arbitrary linear and nonlinear expressions; widths and entropy
- A50 Best approximation (Čebyšev, etc.)
- A55 Approximate quadratures
- A60 Asymptotic approximations, asymptotic expansions (steepest descent, etc.) [See also 30A84.]
- A63 Multidimensional problems
- A65 Abstract approximation theory (approximation in normed linear spaces and other abstract spaces)

42—XX FOURIER ANALYSIS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A04 Trigonometric polynomials, inequalities, extremal problems
- A08 Approximation by trigonometric polynomials
- A12 Trigonometric interpolation
- A16 Fourier coefficients, Fourier series of functions with special properties, special Fourier series
- A18 Multipliers
- A20 Convergence of Fourier and trigonometric series
- A24 Summability of trigonometric series
- A28 Absolute convergence, absolute summability

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- A32 Trigonometric series of special types (positive coefficients, monotonic coefficients, etc.)
- A36 Probabilistic methods in Fourier analysis
- A40 Conjugate functions, conjugate series, singular integrals
- A44 Lacunary series of trigonometric and other functions
- A48 Uniqueness of trigonometric expansions, uniqueness of Fourier expansions, Riemann theory, localization
- A52 Orthogonal functions and polynomials, general theory [See also 33A65.]
- A56 Fourier series in special orthogonal functions (Legendre polynomials, Walsh functions, etc.)
- A60 Series of general orthogonal functions and generalized Fourier expansions
- A62 Uniqueness and localization for orthogonal series
- A64 Completeness of sets of functions
- A68 Fourier transforms
- A72 Fourier-Stieltjes transforms [See also 60E05.]
- A76 Other transforms of Fourier type [See also 44A60.]
- A80 Trigonometric moment problems
- A84 Classical almost periodic functions [See also 43A60.]
- A88 Positive definite functions
- A92 Multiple Fourier series and integrals
- A96 Convolution, factorization

43—XX ABSTRACT HARMONIC ANALYSIS [For other

- analysis on topological and Lie groups, see 22Exx.]
- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- A05 Measures on groups and semigroups
- A07 Means on groups and semigroups
- A10 Measure algebras on groups and semigroups
- A15 L_p spaces and other function spaces on groups and semigroups
- A20 L_1 algebras on groups and semigroups
- A22 Homomorphisms and multipliers of function spaces on groups
- A25 Fourier and Fourier-Stieltjes transforms on locally compact abelian groups
- A30 Fourier and Fourier-Stieltjes transforms on non-abelian groups and on semigroups
- A32 Other transforms and operators of Fourier type
- A35 Positive definite functions on groups
- A40 Character groups and dual objects
- A45 Spectral synthesis on groups and semigroups
- A50 Convergence of Fourier series and of inverse transforms
- A55 Summability methods on groups and semigroups
- A60 Almost periodic functions on groups and semigroups

- A65 Representations of groups and semigroups
- A70 Analysis on specific locally compact abelian groups [See also 12A85.]
- A75 Analysis on specific compact groups
- A80 Analysis on other specific Lie groups
- A85 Analysis on homogeneous spaces
- A90 Spherical functions
- A95 Categorical methods [See also 18—XX.]

44—XX INTEGRAL TRANSFORMS, OPERATIONAL

CALCULUS [For fractional derivatives and integrals, see 26A33.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 General transforms [See also 42A76.]
- A10 Laplace transform
- A15 Special transforms (Legendre, Hilbert, etc.)
- A20 Transforms of special functions
- A25 Singular integrals (Calderón-Zygmund, etc.) [See also 47G05.]
- A30 Multiple transforms
- A35 Convolution
- A40 Calculus of Mikusiński and other similar operational calculi
- A45 Classical operational calculus
- A50 Moment problems [See also 42A80.]

45—XX INTEGRAL EQUATIONS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- 45A05 Linear integral equations
- 45B05 Fredholm integral equations
- 45C05 Eigenvalue problems [See also 34B25, 35Pxx, 47E05.]
- 45D05 Volterra integral equations [See also 34A10.]
- 45Exx Singular integral equations
- E05 Integral equations with Cauchy type kernels [See also 30A88, 35J15, 44A15, 44A35.]
- E10 Integral equations of the convolution type (Abel, Picard, Toeplitz and Wiener-Hopf type) [See also 44A15, 44A35, 47B35.]
- E99 None of the above, but in this section
- 45F05 Systems of linear integral equations
- 45Gxx Nonlinear integral equations [See also 47Hxx.]
- G05 Singular nonlinear integral equations
- G99 Other nonlinear integral equations

- 45H05 Miscellaneous special kernels [See also 44A15.]
- 45J05 Integro-ordinary differential equations
- 45K05 Integro-partial differential equations
- 45Lxx Approximation of solutions
- L05 Theoretical approximation of solutions
- L10 Numerical approximation of solutions [For numerical analysis, see 65R05.]
- 45Mxx Qualitative behavior
- M05 Asymptotics
- M10 Stability theory
- M99 None of the above, but in this section
- 45N05 Abstract integral equations, integral equations in abstract spaces
- 46—XX FUNCTIONAL ANALYSIS** [For manifolds modelled on topological linear spaces, see 57A20, 58Bxx.]
- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- 46Axx Topological linear spaces
- A05 Locally convex spaces
- A07 Barrelled spaces
- A09 Bornological spaces
- A10 Locally bounded topological linear spaces
- A15 Other topological linear spaces
- A20 Duality theory
- A25 Reflexivity and semi-reflexivity
- A30 Open mappings and closed graph theorems and completeness (including B_* , B_* -completeness)
- A35 Summability and bases
- A40 Ordered topological linear spaces, vector lattices
- A45 Sequence spaces (including Köthe spaces)
- A99 None of the above, but in this section
- 46Bxx Normed linear spaces and Banach spaces [For function spaces, see 46Exx.]
- B05 Topology in terms of the norms
- B10 Duality and reflexivity
- B15 Summability and bases
- B99 None of the above, but in this section
- 46Cxx Inner product spaces, Hilbert spaces [For function spaces, see 46Exx.]
- C05 Geometry and topology of the spaces
- C10 Other properties of such spaces
- 46D05 Spaces with indefinite inner product
- 46Exx Function spaces [For function algebras, see 46J10.]
- E05 Lattices of continuous, differentiable or analytic functions
- E10 Topological linear spaces of continuous, differentiable or analytic functions
- E15 Banach spaces of continuous, differentiable or analytic functions
- E20 Hilbert spaces of continuous, differentiable or analytic functions
- E25 Rings and algebras of continuous, differentiable or analytic functions [For Banach function algebras, see 46J10, 46J15.]
- E30 Spaces of measurable functions, L^p spaces, Orlicz spaces [See also 43A15.]
- E35 Sobolev spaces, embedding theorems, trace theorems, interpolation spaces
- E40 Spaces of vector- and operator-valued functions
- E99 None of the above, but in this section
- 46Fxx Distributions, generalized functions, distribution spaces
- F05 Topological linear spaces of test functions and distributions
- F10 Operations with distributions
- F15 Hyperfunctions, analytic functionals [See also 32A25, 32C35.]
- F99 None of the above, but in this section
- 46Gxx Measures, integration, derivatives [For integration on infinite-dimensional spaces, see 28A40; for nonlinear functional analysis, see 58—XX, especially 58Cxx.]
- G05 Derivatives
- G10 Vector-valued measures and integration
- G15 Lifting theory
- G99 None of the above, but in this section
- 46Hxx Topological algebras, normed rings and algebras, Banach algebras [For group algebras, convolution algebras and measure algebras, see 43—XX.]
- H05 General theory
- H10 Ideals and subalgebras
- H15 Representations
- H20 Structure, classification
- H25 Normed modules and Banach modules
- H99 None of the above, but in this section
- 46Jxx Commutative Banach algebras
- J05 General theory
- J10 Banach algebras of continuous functions, function algebras
- J15 Banach algebras of differentiable or analytic functions, H^p -spaces [See also 30A98, 32E25.]
- J20 Ideals, maximal ideals, boundaries
- J25 Representations
- J30 Subalgebras
- J35 Structure, classification
- J99 None of the above, but in this section
- 46Kxx Rings and algebras with an involution
- K05 Ideals, subalgebras
- K10 Representations
- K15 Hilbert algebras
- K99 None of the above, but in this section
- 46Lxx Rings and algebras of operators, with or without involution [For other algebraic systems of operators, see 47Dxx.]
- L05 C^* -algebras (= B^* -algebras) [See also 22D25.]
- L10 von Neumann algebras (= rings of operators, W^* -algebras)
- L15 Nonselfadjoint operator algebras on Hilbert space
- L20 Operator algebras on Banach and linear topological spaces
- L25 Dual spaces of operator algebras and topological groups
- L99 None of the above, but in this section
- 46Mxx Categorical methods [See also 18—XX.]
- M05 Tensor products
- M10 Projective and injective objects
- M15 Functors

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

M99 None of the above, but in this section
46N05 Miscellaneous applications of functional analysis

47—XX OPERATOR THEORY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

47Axx Single linear operators: general theory

- A05 Adjoints, conjugates
- A10 Spectrum, resolvent, numerical range
- A15 Invariant subspaces
- A20 Dilations, extensions, compressions
- A25 Spectral sets
- A30 Norms (inequalities, more than one norm, etc.)
- A35 Ergodic theory [See also 28A65.]
- A40 Scattering theory [See also 35J10.]
- A45 Canonical models for contractions and nonselfadjoint operators
- A50 Equations involving linear operators
- A55 Perturbation theory
- A60 Functional calculus
- A65 Structure theory
- A70 Eigenfunction expansions, rigged Hilbert spaces

47Bxx Single linear operators: special classes of operators

- B05 Compact operators, Riesz operators
- B10 Hilbert-Schmidt operators, trace class operators, nuclear operators, etc.
- B15 Hermitian and normal operators (spectral measures, functional calculus, etc.)
- B20 Subnormal operators, hyponormal operators, etc.
- B25 Symmetric and selfadjoint operators (unbounded)
- B30 Fredholm operators
- B35 Toeplitz operators, Wiener-Hopf operators [For other integral operators, see also 47G05.]
- B40 Spectral operators
- B44 Dissipative operators
- B45 Difference operators
- B47 Commutators
- B50 Operators on a space with an indefinite metric
- B55 Operators on ordered spaces
- B99 None of the above, but in this section

47Cxx Single linear operators as elements of algebraic systems

- C05 Operators in algebras
- C10 Operators in \ast -algebras
- C15 Operators in von Neumann algebras
- C99 None of the above, but in this section

47Dxx Algebraic systems of linear operators [For rings and algebras of operators, see 46Kxx, 46Lxx.]

- D05 Semigroups of operators [For Markov processes, see 60Jxx.]
- D10 Groups of operators
- D15 Linear spaces of operators

D20 Convex sets and cones of operators

D99 None of the above, but in this section

47E05 Ordinary differential operators [See also 34B25, 58Fxx.]

47F05 Partial differential operators [See also 35Pxx, 58Gxx.]

47G05 Integral, integro-differential, and pseudodifferential operators [See also 35Sxx, 58Gxx.]

47Hxx Nonlinear operators

H05 Monotone operators

H10 Fixed point theorems

H15 Equations involving nonlinear operators

H99 None of the above, but in this section

49—XX CALCULUS OF VARIATIONS AND OPTIMAL

CONTROL [See also 34H05, 93Exx.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

49Axx Existence theory for optimal solutions

- A05 Free problems in one independent variable
- A10 Problems involving ordinary differential equations
- A15 Free problems in two or more independent variables
- A20 Problems involving partial differential equations
- A25 Problems in abstract spaces
- A30 Problems involving functional relations other than differential equations
- A35 Optimal solutions belonging to restricted classes (bang-bang controls, etc.)
- A40 Minimax problems
- A50 Topology of solutions, weak and strong minima, semicontinuity, convexity, orientor fields
- A99 None of the above, but in this section

49Bxx Necessary conditions and sufficient conditions for optimality

- B05 Free problems in one independent variable
- B10 Problems involving ordinary differential equations
- B15 Optimal solutions belonging to restricted classes
- B20 Free problems in two or more independent variables
- B25 Problems involving partial differential equations
- B30 Problems in abstract spaces
- B35 Problems involving functional relations other than differential equations
- B40 Minimax problems
- B50 Sensitivity of optimal solutions in the presence of perturbations
- B99 None of the above, but in this section

49Cxx Carathéodory, Hamilton-Jacobi theories, including dynamic programming

- C05 Free problems and problems involving ordinary differential equations

- C10 Free problems and problems involving partial differential equations
- C15 Problems in abstract spaces or involving functional relations other than differential equations
- C99 None of the above, but in this section
- 49Dxx Methods of successive approximations**
- D05 Methods based on necessary conditions
- D10 Methods of steepest descent type
- D15 Methods of Newton-Raphson, Galerkin and Ritz types
- D20 Methods of relaxation type
- D25 Finite difference methods
- D30 Other methods, not based on necessary conditions (penalty function, etc.)
- D35 Methods of linear programming type
- D40 Methods of quadratic programming type
- D45 Methods of convex programming type
- D99 None of the above, but in this section
- 49Exx Controllability and geometry of control problems**
- E05 General dependence on controls
- E10 Orientor fields (contingency equations)
- E15 Attainable sets, controllability
- E20 Interrelations between stability problems and optimization problems
- E25 Effect of perturbations on controllability
- E30 Relations between controllability and optimal solutions
- E99 None of the above, but in this section
- 49Fxx Manifolds**
- F05 Exterior differential forms, invariant integrals (Cartan theory) [See also 58A15.]
- F10 Minimal surfaces
- F15 Morse theory in Hilbert and other spaces [See also 58Exx.]
- F20 Geometric measure and integration theory, integral and normal currents, flat chains and cochains, varifolds [See also 58A25.]
- F22 Existence and structure of solutions to variational problems in geometric measure-theoretic setting
- F25 Surface area
- F99 None of the above, but in this section
- 49Gxx Variational methods and eigenvalues**
- G05 Variational approach to eigenvalues
- G10 Rayleigh-Ritz methods
- G15 Weinstein and Aronszajn methods, intermediate problems
- G20 Linear operators in Hilbert spaces
- G99 None of the above, but in this section
- 49H05 Variational principles of physics [See also 70Hxx, 81A09.]**

50—XX GEOMETRY [For algebraic geometry, see 14—XX.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

50Axx Foundations

- A05 Euclidean
- A10 Noneuclidean
- A15 Transformation groups
- A20 Algebraic characterizations [See also 06A75, 12K05, 16A76, 16A78, 16A80, 17D05, 17E05, 20N10.]
- A25 Models [See also 02H15.]
- A30 Length, area, volume
- A99 None of the above, but in this section

50Bxx Euclidean geometry (including equiform geometry)

- B05 Constructions
- B10 Metric formulae
- B15 Inequalities
- B20 Geometry of circles
- B25 Euclidean and equiform geometry over fields other than the reals
- B30 Regular figures, division of space [See also 20H15.]
- B35 Other groups generated by reflections
- B99 None of the above, but in this section

50Cxx Other metric geometries

- C05 Elliptic and hyperbolic, general
- C10 Elliptic and hyperbolic inequalities
- C15 Groups generated by elliptic and hyperbolic reflections [See also 20H10.]
- C20 Hyperbolic convexity
- C25 Other metric geometries

50Dxx Geometries of other transformation groups

- D05 Affine geometry, general
- D10 Affine geometry, subgroups (centro-affine, equiaffine)
- D15 Descriptive geometry
- D20 Projective geometry over the reals
- D25 Projective geometry over other infinite fields
- D30 Projective geometry over finite fields
- D35 Projective geometry over combinatorial or nonfield structures
- D40 Line geometry
- D45 Circle and sphere geometry: Lie, Laguerre, Möbius
- D50 Geometries of other space elements
- D99 None of the above, but in this section

52—XX CONVEX SETS AND GEOMETRIC INEQUALITIES

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Convex sets without dimension restrictions
- A10 Convex sets in 2 dimensions
- A15 Convex sets in 3 dimensions
- A20 Convex sets in n dimensions
- A25 Convex polyhedra
- A30 Star-shaped sets
- A35 Helly-type theorems
- A40 Inequalities and extremum problems
- A45 Packing and covering [See also 05B40, 10E30, 50B30.]

- A50 Hilbert geometry and other distance geometries
 A55 Spherical convexity [See also 50C20.]

- C70 Direct methods (G -spaces of Busemann, etc.)
 C75 Geometric orders, order geometry
 C99 None of the above, but in this section

53—XX DIFFERENTIAL GEOMETRY [For differential topology, see 57Dxx. For foundational questions of differentiable manifolds, see 58Axx.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)

53Axx Classical differential geometry

- A05 Curves and surfaces in euclidean space
 A10 Minimal surfaces
 A15 Affine differential geometry
 A20 Projective differential geometry
 A25 Differential line geometry
 A30 Conformal differential geometry
 A35 Noneuclidean differential geometry
 A40 Other special differential geometries
 A45 Vector and tensor analysis
 A50 Spinor analysis
 A55 Differential invariants (local theory), geometric objects
 A99 None of the above, but in this section

53Bxx Local differential geometry

- B05 Affine connections
 B10 Projective connections
 B15 Other connections
 B20 Local Riemannian geometry
 B25 Submanifolds
 B30 Lorentz metrics, indefinite metrics
 B35 Hermitian and Kählerian structures [See also 32Cxx.]
 B40 Finsler spaces and generalizations (areal metrics)
 B99 None of the above, but in this section

53Cxx Global differential geometry [For related bundle theory, see 55Fxx, 57Dxx.]

- C05 Connections
 C10 G -structures
 C15 Almost complex, contact, symplectic, almost product structures, etc.
 C20 Riemannian manifolds, including pinching [See also 58B20.]
 C25 Special Riemannian manifolds (Einstein, Sasakian, etc.)
 C30 Homogeneous manifolds [See also 57F15.]
 C35 Symmetric spaces [See also 57F15.]
 C40 Submanifolds, isometric imbeddings [See also 57D40.]
 C45 Global surface theory (convex surfaces à la A. D. Aleksandrov)
 C50 Lorentz manifolds, manifolds with indefinite metrics
 C55 Hermitian and Kählerian structures [See also 32Cxx.]
 C60 Finsler spaces and generalizations (areal metrics) [See also 58B20.]
 C65 Integral geometry, differential forms, currents, etc.

54—XX GENERAL TOPOLOGY [For the topology of manifolds of all dimensions, see 57Axx.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)

54Axx Generalities

- A05 Topological spaces and generalizations (closure spaces, etc.)
 A10 Change of topology, comparison of topologies
 A15 Syntopogeneous structures
 A20 Convergence (general theory) and limits
 A25 Cardinality properties (discrete subsets, weight, etc.)
 A99 None of the above, but in this section

54Bxx Basic constructions

- B05 Subspaces
 B10 Product spaces
 B15 Quotient spaces, decompositions
 B17 Adjunction spaces and similar constructions
 B20 Hyperspaces
 B25 Sums, inverse limits
 B99 None of the above, but in this section

54Cxx Maps and general types of spaces defined by maps

- C05 Continuous maps
 C10 Special maps: open, closed, perfect, almost open, light, etc.
 C15 Retraction
 C20 Extension
 C25 Imbedding
 C30 Real-valued functions [See also 26—XX.]
 C35 Function spaces [See also 58D15.]
 C40 $C(X)$; algebraic techniques (ideals, etc.) [See also 46J10.]
 C45 C - and C^* -imbedding
 C50 Zero sets, Baire sets and functions [See also 26A21.]
 C55 Absolute neighborhood extensor, absolute extensor, absolute neighborhood retract (ANR), absolute retract spaces (general properties)
 C60 Set-valued maps
 C65 Selections
 C99 None of the above, but in this section

54Dxx Fairly general properties

- D05 Connected and locally connected spaces (general aspects)
 D10 Separation axioms, $T_0 - T_3$
 D15 Higher separation axioms (completely regular, normal, perfectly or collection-wise normal, etc.)
 D20 Covering properties: Lindelöf, (m, n) -compact, paracompact, pointwise paracompact, etc.

- D25 "P-minimal" and "P-closed" spaces
 D30 Compact spaces and generalizations
 D35 Compactifications, etc.
 D40 Remainders
 D45 Local compactness, σ -compactness
 D50 k -spaces
 D55 Sequential spaces
 D60 Realcompactness and realcompactification
 D99 None of the above, but in this section
- 54Exx Spaces with richer structures**
 E05 Proximity structures and generalizations
 E10 p -maps
 E15 Uniform structures and generalizations
 E20 Stratifiable spaces, cosmic spaces, etc.
 E25 Semimetric spaces
 E30 Moore spaces
 E35 Metric spaces, metrizability
 E40 Isometries, contractions, expansions
 E45 Compact (locally compact) metric spaces
 E50 Complete metric spaces
 E55 Bitopologies
 E60 CW-complexes, triangulable spaces
 E99 None of the above, but in this section
- 54Fxx Special properties**
 F05 Ordered topological spaces, partially ordered spaces [See also 06A45.]
 F15 Continua and generalizations
 F20 Special types of continua
 F25 Peano spaces and generalizations
 F30 Cyclic elements
 F35 Higher dimensional local connectedness [See also 55Bxx, 55Cxx.]
 F40 Compact (locally compact) absolute neighborhood retracts
 F45 Dimension theory [See also 55C10.]
 F50 Spaces of dimension ≤ 1 ; curves, dendrites [See also 26A03.]
 F55 Unicoherence, multicoherence
 F60 Maps into S_n
 F65 Topological characterizations of particular spaces
 F99 None of the above, but in this section
- 54Gxx Peculiar spaces**
 G05 Extremely disconnected spaces, F -spaces, etc.
 G10 P -spaces
 G15 Pathological spaces
 G20 Counterexamples
 G99 None of the above, but in this section
- 54Hxx Connections with other structures, applications**
 H05 Descriptive set theory (topological aspects of Borel, analytic, projective, etc. sets) [See also 04A15, 26A21, 28A05.]
 H10 Topological representations of algebraic systems [See also 22—XX.]
 H15 Transformation groups and semigroups [See also 20Mxx, 22—XX, 57Exx.]
 H20 Topological dynamics [See also 28A65, 34C35, 58Fxx.]
 H25 Fixed-point and coincidence theorems [See also 47H10, 55C20.]
 H99 None of the above, but in this section
- 54J05 Nonstandard topology**
- 55—XX ALGEBRAIC TOPOLOGY**
 —00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)
- 55Axx Low-dimensional topology [See also 57Axx.]**
 A05 Fundamental group, presentations, free differential calculus [See also 20E40.]
 A10 Covering spaces, branched coverings
 A15 Graphs and map coloring [For other graph theory, see 05Cxx.]
 A20 Two-dimensional complexes
 A25 Knots and links [For the high-dimensional case, see 57C45.]
 A30 Wild knots and surfaces, etc.
 A35 Dehn's Lemma, sphere theorem, loop theorem, asphericity
 A40 Characterizations of E^3 and S^3 (Poincaré conjecture)
 A99 None of the above, but in this section
- 55Bxx Homology and cohomology theories**
 B05 Čech types
 B10 Singular theory
 B15 K -theory [For algebraic K -theory, see 18F25.]
 B20 Generalized (extraordinary) homology and cohomology theories, spectra
 B25 Homology with local coefficients, equivariant cohomology
 B30 Sheaf cohomology [See also 18F20, 32C35, 32L10.]
 B35 Other homology theories
 B40 Axioms for homology theory and uniqueness theorems
 B45 Products and intersections
 B99 None of the above, but in this section
- 55Cxx Classical topics [For the topology of Euclidean spaces and manifolds, see 57A05, 57A10, 57A15.]**
 C05 Duality
 C10 Dimension theory [See also 54F45.]
 C15 Absolute neighborhood retracts [See also 54C55.]
 C20 Fixed points and coincidences [See also 54H25.]
 C25 Degree
 C30 Ljusternik-Schnirelman category of a space
 C35 Finite groups of transformations (Smith theory)
 C99 None of the above, but in this section
- 55Dxx Homotopy theory [For simple homotopy type, see 57C10.]**
 D05 Homotopy extension properties, cofibrations
 D10 Homotopy equivalences
 D15 Classification of homotopy type
 D20 Eilenberg-MacLane spaces
 D25 Spanier-Whitehead duality
 D30 Eckmann-Hilton duality
 D35 Loop spaces
 D40 Suspensions
 D45 H -spaces and duals
 D50 Category and cocategory, etc.
 D99 None of the above, but in this section
- 55Exx Homotopy groups**
 E05 Homotopy groups, general; sets of homotopy classes

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- E10 Stable homotopy groups
- E15 Whitehead products and generalizations
- E20 Homotopy groups of wedges, joins, and simple spaces
- E25 Hopf invariants
- E30 Homotopy groups of triads, n -ads
- E35 Operations in homotopy groups
- E40 Homotopy groups of spheres
- E45 Stable homotopy of spheres
- E50 The J -morphism
- E55 Cohomotopy groups
- E99 None of the above, but in this section

55Fxx Fiber spaces and bundles [See also 18F15.]

- F05 Fiber spaces
- F10 Fiber bundles
- F15 Classification
- F20 Spectral sequences and homology of fiber spaces [See also 55Hxx.]
- F25 Sphere bundles and vector space bundles
- F35 Classifying spaces of groups and H -spaces
- F40 Homology of classifying spaces, characteristic classes
- F45 Homology and homotopy of BO and BU ; Bott periodicity
- F50 Stable classes of vector space bundles, K -theory [For algebraic K -theory, see 18F25.]
- F55 Fiberings with singularities
- F60 Microbundles and block bundles
- F65 Generalizations of fiber spaces and bundles
- F99 None of the above, but in this section

55Gxx Operations and obstructions

- G05 Primary cohomology operations
- G10 Steenrod algebra
- G15 Symmetric products, cyclic products
- G20 Secondary and higher cohomology operations
- G25 K -theory operations and generalized cohomology operations
- G30 Massey products
- G35 Obstruction theory
- G36 Extension and compression of mappings
- G37 Classification of mappings
- G40 Sectioning fiber spaces and bundles
- G45 Postnikov systems, k -invariants
- G99 None of the above, but in this section

55Hxx Spectral sequences

- H05 General
- H10 Serre spectral sequences
- H15 Adams spectral sequences
- H20 Eilenberg-Moore spectral sequences
- H25 Generalized cohomology
- H99 None of the above, but in this section

55Jxx Applied homological algebra [See also 18Gxx.]

- J05 Abstract complexes
- J10 Simplicial complexes
- J15 Chain complexes
- J20 Universal coefficient theorems, Bockstein operator
- J25 Homology of a product, Künneth formula
- J30 Duality
- J99 None of the above, but in this section

57-XX MANIFOLDS AND CELL COMPLEXES [For complex manifolds, see 32C10.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

57Axx Topological manifolds

- A05 Topology of E_2 , 2-manifolds
- A10 Topology of E_3 , 3-manifolds [See also 55Axx.]
- A15 Topology of E_n , n -manifolds ($3 < n < \infty$)
- A17 Topology of topological vector spaces
- A20 Topology of infinite-dimensional manifolds [See also 58Bxx.]
- A30 Engulfing
- A35 Imbeddings and immersions
- A40 Neighborhoods of submanifolds
- A45 Flatness
- A50 $S^{n-1} \subset E^n$, Schoenflies problem
- A55 Microbundles
- A60 Cellularity
- A65 Algebraic topology of manifolds
- A70 Cobordism
- A99 None of the above, but in this section

57Bxx Generalized manifolds [See also 18F15.]

- B05 Local properties
- B10 Poincaré duality spaces
- B99 None of the above, but in this section

57Cxx PL-topology

- C05 The general topology of complexes
- C10 Simple homotopy type, Whitehead torsion, Reidemeister-Franz torsion, etc.
- C15 Triangulating manifolds
- C20 Cobordism
- C25 Comparison of PL-structures: classification, Hauptvermutung
- C30 Engulfing
- C35 Imbeddings and immersions
- C40 Regular neighborhoods
- C45 Knots and links (in high dimensions) [For the low-dimensional case, see 55A25.]
- C50 Microbundles and block bundles [See also 55F00.]
- C55 Approximations
- C99 None of the above, but in this section

57Dxx Differential topology [For foundational questions of differentiable manifolds, see 58Axx; for infinite dimensional manifolds, see 58Bxx.]

- D05 Triangulating
- D10 Smoothing
- D12 Smooth approximations
- D15 Specialized structures on manifolds (spin manifolds, frame manifolds, etc.)
- D20 Characteristic classes
- D25 Vector fields, frame fields, etc.
- D30 Foliations
- D35 Differentiable mappings
- D40 Imbeddings and immersions
- D45 Singularities of differentiable mappings
- D50 Diffeomorphisms
- D55 Differentiable structures
- D60 Homotopy spheres, Poincaré conjecture
- D65 Surgery and handlebodies
- D70 Critical points and critical submanifolds
- D75 O - and SO -cobordism
- D80 A - and s -cobordism
- D85 Equivariant cobordism
- D90 Other types of cobordism

- D95 Realizing cycles by submanifolds
D99 None of the above, but in this section
- 57Exx Topological transformation groups** [See also 20E40, 22—XX, 54H15, 58D05.]
E05 Topological properties of groups of homeomorphisms
E10 Compact groups of homeomorphisms
E15 Compact Lie groups of differentiable transformations
E20 Noncompact Lie groups of transformations
E25 Groups acting on specific manifolds
E30 Discontinuous groups of transformations
E99 None of the above, but in this section
- 57Fxx Homology and homotopy of topological groups and related structures**
F05 Hopf algebras [See also 16A24.]
F10 Homology of Lie groups
F15 Homology of homogeneous spaces of Lie groups
F20 Homotopy groups of topological groups and homogeneous spaces
F25 Homology of H -spaces
F30 Bar and cobar constructions
F35 Applications of Eilenberg-Moore spectral sequences [See also 55F20, 55H20.]
F99 None of the above, but in this section
- 58—XX GLOBAL ANALYSIS, ANALYSIS ON MANIFOLDS**
[For real-analytic and complex manifolds, see 32Cxx; for geometric integration theory, see 49F20, 49F22.]
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—01 Elementary exposition (collegiate level)
—02 Advanced exposition (research surveys, etc.)
—03 Historical
—04 Explicit machine computation and programs (not the theory of computation or programming)
- 58Axx General theory of differentiable manifolds**
A05 Differentiable manifolds, foundations
A10 Differential forms
A15 Exterior differential systems (Cartan theory) [For variational problems, see 49F05.]
A20 Jets
A25 Currents
A30 Vector distributions (sub-bundles of the tangent bundles)
A99 None of the above, but in this section
- 58Bxx Infinite dimensional manifolds** [See also 57A20.]
B05 Homotopy and topological questions
B10 Differentiable and holomorphic questions
B15 Fredholm structures
B20 Riemannian, Finsler, and other geometric structures
B99 None of the above, but in this section
- 58Cxx Calculus on manifolds**
C05 Real-valued functions
C10 Holomorphic maps
C15 Implicit function theorems
C20 Differentiation theory (Gâteaux, Fréchet, etc.)
- C25 Differentiable maps and singularities
C99 None of the above, but in this section
- 58Dxx Spaces and manifolds of mappings**
D05 Groups of diffeomorphisms and homeomorphisms as manifolds [See also 22Exx, 57E05.]
D10 Spaces of imbeddings and immersions
D15 Manifolds of mappings [See also 54C35.]
D99 None of the above, but in this section
- 58Exx Critical point theory** [For the finite dimensional case, see 57D70; for variational problems, see 49F15.]
E05 Abstract theory (Morse theory, Ljusternik-Schnirelman theory, etc.)
E10 Application to theory of geodesics
E15 Application to extremal problems in several variables
E99 None of the above, but in this section
- 58Fxx Differentiable dynamical systems** [For abstract and symbolical topological dynamics, see 28A65, 34C35, 54H20.]
F05 Hamiltonian and other special systems
F10 Stability theory
F15 Hyperbolic structures (expanding maps, Anosov systems, etc.)
F20 Periodic points and zeta functions
F99 None of the above, but in this section
- 58Gxx Differential operators on manifolds**
G05 Elliptic complexes [See also 35N15.]
G10 Index theorems and fixed point theorems
G15 Pseudodifferential operators on manifolds
G99 None of the above, but in this section
- 58H05 Pseudogroups (infinite dimensional Lie groups) and deformations of structures** [See also 22E65.]
- 60—XX PROBABILITY THEORY AND STOCHASTIC PROCESSES** [For additional applications, see 10Kxx, 42A36, 62—XX, 90—XX, 92—XX, 93—XX, 94—XX.]
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—01 Elementary exposition (collegiate level)
—02 Advanced exposition (research surveys, etc.)
—03 Historical
—04 Explicit machine computation and programs (not the theory of computation or programming)
- 60A05 Axioms, foundations**
60Bxx Probability theory on algebraic and topological structures
B05 Probability measures on topological spaces
B10 Convergence of probability measures, invariance theorems [See also 28A65.]
B15 Probability measures on groups, Fourier transforms, factorization
B99 None of the above, but in this section
- 60C05 Combinatorial probability**
60D05 Geometric probability
60E05 Distributions, characteristic functions
60Fxx Limit theorems
F05 Central limit and other weak theorems
F10 Large deviations
F15 Strong theorems [See also 28A65.]

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- F20** Zero-one laws
- F99** None of the above, but in this section
- 60Gxx** **Stochastic processes**
- G05** Foundations of stochastic processes
- G10** Stationary processes
- G15** Gaussian processes
- G17** Sample path properties
- G20** Generalized stochastic processes
- G25** Prediction theory [See also 62M10.]
- G30** Continuity and singularity of induced measures
- G35** Applications (signal detection, filtering, etc.) [See also 84A05.]
- G40** Stopping times
- G45** Martingale theory
- G50** Sums of independent random variables
- G99** None of the above, but in this section
- 60Hxx** **Stochastic analysis**
- H05** Stochastic integrals
- H10** Stochastic ordinary differential equations [See also 34F05.]
- H15** Stochastic partial differential equations
- H20** Stochastic integral equations
- H99** None of the above, but in this section
- 60Jxx** **Markov processes**
- J05** Markov processes with discrete parameter
- J10** Markov chains
- J15** Random walk
- J20** Applications of discrete Markov processes (social mobility, learning theory, industrial processes, etc.)
- J25** Markov processes with continuous parameter
- J30** Processes with independent increments
- J35** Transition functions, generators and resolvents [See also 47D05.]
- J40** Hunt processes
- J45** Probabilistic potential theory [See also 31-XX.]
- J50** Boundary theory
- J55** Local time and additive functionals
- J60** Diffusion processes [See also 28A65.]
- J65** Brownian motion
- J70** Applications of diffusion theory (population genetics, absorption problems, etc.)
- J75** Jump processes
- J80** Branching processes (Galton-Watson, birth-and-death, etc.)
- J85** Applications of branching processes [See also 90Bxx.]
- J99** None of the above, but in this section
- 60Kxx** **Special processes**
- K05** Renewal theory
- K10** Applications (reliability, demand theory, etc.)
- K15** Markov renewal processes, semi-Markov processes
- K20** Applications of Markov renewal processes (reliability, queueing networks, etc.)
- K25** Queueing theory
- K30** Applications (congestion, allocation, storage, traffic, etc.) [See also 60J80.]
- K35** Interacting random processes, statistical mechanics type models
- K99** None of the above, but in this section

62-XX **STATISTICS**

- 00** Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01** Elementary exposition (collegiate level)
- 02** Advanced exposition (research surveys, etc.)
- 03** Historical
- 04** Explicit machine computation and programs (not the theory of computation or programming)
- 62Axx** **Foundations**
- A05** Invariance and group considerations
- A10** The likelihood approach
- A15** The Bayesian approach
- A99** None of the above, but in this section
- 62Bxx** **Sufficiency**
- B05** Sufficient statistics and fields
- B10** Statistical information theory
- B15** Comparison of experiments
- B20** Measure-theoretic results, etc.
- B99** None of the above, but in this section
- 62Cxx** **Decision theory (For game theory, see 90Dxx.)**
- C05** General considerations
- C07** Complete class results
- C10** Bayesian problems; characterization of Bayes procedures
- C15** Admissibility
- C25** Compound decision problems
- C99** None of the above, but in this section
- 62D05** **Sampling theory, sample surveys**
- 62Exx** **Distribution theory**
- E10** Characterization and structure theory
- E15** Distribution of statistics
- E20** Asymptotic theory
- E25** Monte Carlo studies
- E99** None of the above, but in this section
- 62Fxx** **Parametric inference**
- F05** Hypothesis testing
- F07** Ranking and selection
- F10** Estimation
- F15** Bayesian inference
- F20** Asymptotic efficiency
- F25** Tolerance and confidence regions
- F99** None of the above, but in this section
- 62Gxx** **Nonparametric inference**
- G05** Estimation
- G10** Hypothesis testing
- G15** Tolerance and confidence regions
- G20** Asymptotic efficiency
- G25** Quick and easy methods
- G30** Order statistics
- G35** Robustness
- G99** None of the above, but in this section
- 62Hxx** **Multivariate analysis**
- H05** Characterization and structure theory
- H10** Distribution of statistics
- H15** Hypothesis testing
- H20** Correlation analysis, canonical correlation
- H25** Factor analysis and principal components
- H30** Classification and discrimination
- H99** None of the above, but in this section
- 62Jxx** **Linear inference**
- J05** Regression analysis
- J10** Analysis of variance and covariance
- J15** Paired and multiple comparisons
- J99** None of the above, but in this section

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- 62Kxx** Experimental design [See also 05Bxx.]
K05 Optimal designs
K10 Block designs
K15 Factorial designs
K99 None of the above, but in this section
- 62Lxx** Sequential methods
L05 Sequential design
L10 Sequential analysis
L12 Sequential estimation
L15 Optimal stopping [See also 60G40.]
L20 Stochastic approximation
L99 None of the above, but in this section
- 62Mxx** Inference from stochastic processes
M05 Markov processes
M10 Time series, auto-correlation, regression, etc.
M15 Spectral analysis of time series
M20 Prediction [See also 60G25.]
M99 None of the above, but in this section
- 62Nxx** Engineering statistics
N05 Reliability and life testing
N10 Quality control [See also 90Bxx.]
N15 Stochastic differential and difference equations [See also 34F05, 60H10, 93Exx.]
N99 None of the above, but in this section
- 62Pxx** Applications [See also 82—XX, 90—XX, 92—XX.]
P05 Actuarial mathematics
P10 Biometrics
P15 Psychometrics
P20 Econometrics
P25 Sociometrics
P99 None of the above, but in this section
- 62Q05** Statistical tables
- 65—XX NUMERICAL ANALYSIS**
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—01 Elementary exposition (collegiate level)
—02 Advanced exposition (research surveys, etc.)
—03 Historical
- 65A05** Tables
- 65Bxx** Acceleration of convergence
B05 Extrapolation to the limit, deferred corrections
B10 Summation of series
B15 Euler-MacLaurin formula
B20 Poisson formula, etc.
B99 None of the above, but in this section
- 65Cxx** Numerical simulation [See also 68A55.]
C05 Monte Carlo methods
C10 Random number generation
C99 None of the above, but in this section
- 65Dxx** Numerical approximation [Primarily algorithms; for theory, see 41—XX.]
D05 Interpolation
D10 Smoothing, curve fitting
D15 Algorithms for functional approximation
D20 Computation of special functions, construction of tables
D25 Numerical differentiation
D30 Numerical integration, quadrature, cubature, etc.
D99 None of the above, but in this section
- 65E05** Numerical methods in complex analysis (potential theory, etc.) [For numerical methods in conformal mapping, see 30A28.]
- 65Fxx** Numerical linear algebra
F05 Direct methods for linear systems and matrix inversion
F10 Iterative methods for linear systems [See also 65N20.]
F15 Eigenvalues, eigenvectors
F20 Overdetermined systems, pseudoinverses
F25 Orthogonalization
F30 Other matrix algorithms
F35 Matrix norms, conditioning, scaling [See also 15A12, 15A60.]
F99 None of the above, but in this section
- 65G05** Roundoff error
- 65Hxx** Nonlinear algebraic or transcendental equations
H05 Single equations
H10 Systems of equations
- 65J05** Numerical analysis in abstract spaces
- 65K05** Mathematical programming and optimization techniques [Computational aspects; for algorithms and theory, see 49Exx and 90Cxx.]
- 65Lxx** Ordinary differential equations
L05 Initial value problems
L10 Boundary value problems
L15 Eigenvalue problems
L99 None of the above, but in this section
- 65Mxx** Partial differential equations, initial value problems
M05 Derivation of finite difference approximations
M10 Stability and convergence of difference methods
M15 Error bounds
M20 Method of lines
M25 Method of characteristics
M30 Improperly posed problems
M99 None of the above, but in this section
- 65Nxx** Partial differential equations, boundary value problems
N05 Derivation of finite difference approximations
N10 Convergence of difference methods
N15 Error bounds
N20 Solution of difference equations [See also 65F10.]
N25 Eigenvalue problems
N30 Rayleigh-Ritz and Galerkin methods
N35 Collocation and related methods
N99 None of the above, but in this section
- 65P05** Partial differential equations, miscellaneous problems
- 65Q05** Difference and functional equations, recurrence relations
- 65R05** Integral and integro-differential equations
- 65S05** Graphical methods
- 65T05** Harmonic analysis and synthesis
- 68—XX COMPUTER SCIENCE** [For papers involving machine computations and programs in a specific mathematical area, see section —04 in that area.]
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—01 Elementary exposition (collegiate level)
—02 Advanced exposition (research surveys, etc.)

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- 03 Historical
- A05 Programming theory
- A10 Algorithms [See also 02E10.]
- A15 Symbolic computation
- A20 Computational complexity and efficiency
- A25 Automata theory [See also 02F10, 18B20, 94A30, 94A35.]
- A30 Linguistics, formal languages
- A35 Adaptive systems
- A40 Theorem proving
- A45 Artificial intelligence, pattern recognition
- A50 Information retrieval
- A55 Simulation [See also 65Cxx.]

70—XX MECHANICS OF PARTICLES AND SYSTEMS

[For relativistic mechanics, see 83A05 and 83C10; for statistical mechanics, see 82—XX.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

70A05 Axiomatics

70Bxx Kinematics

- B05 Kinematics of a particle
- B10 Kinematics of a rigid body
- B15 Mechanisms and linkages
- B99 None of the above, but in this section

70Cxx Statics

- C05 Forces, fields
- C10 Potential energy
- C99 None of the above, but in this section

70Dxx Dynamics of a particle [See also 70Hxx.]

- D05 Newtonian dynamics
- D10 Lagrangian dynamics
- D99 None of the above, but in this section

70Exx Dynamics of a rigid body

- E05 Motion of the gyroscope
- E10 Motion of projectiles and rockets
- E15 Motion of a general rigid body
- E20 Perturbation methods for Euler's equations
- E25 Poincaré method
- E99 None of the above, but in this section

70Fxx Dynamics of a system of particles

- F05 Two-body problem
- F10 *n*-body problem
- F15 Celestial mechanics
- F20 Holonomic systems
- F25 Nonholonomic systems
- F30 Impulsive motion
- F35 Collisions
- F99 None of the above, but in this section

70Gxx General representation of dynamical systems

- G05 Riemannian geometry, tensorial methods [See also 53A45, 53A50, 53B20.]
- G10 Generalized coordinates
- G15 Space of events
- G20 Impulse-energy space
- G25 Configuration space
- G30 State space
- G35 Phase space

G99 None of the above, but in this section

70Hxx Hamiltonian mechanics

- H05 Hamilton's equations
- H10 Liouville's theorem
- H15 Canonical transformations
- H20 Hamilton-Jacobi equations
- H25 Variational methods
- H99 None of the above, but in this section

70Jxx Linear vibration theory

- J05 Finite degree of freedom systems
- J10 Normal modes of vibrations
- J15 Conservative systems
- J20 Nonconservative systems
- J25 Stability of oscillatory motions
- J99 None of the above, but in this section

70Kxx Nonlinear oscillations

- K05 Phase plane analysis
- K10 Limit cycles
- K15 Ljapunov theorems
- K20 Stability
- K99 None of the above, but in this section

70L05 Random vibrations [See also 93Exx.]

70Mxx Orbital mechanics

- M05 Satellite problems
- M10 Orbital stability
- M99 None of the above, but in this section

70N05 Exterior ballistics

70P05 Variable mass, rockets

73—XX MECHANICS OF SOLIDS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

73A05 Axiomatics

73Bxx Continuum mechanics [For fluids, see 76Axx.]

- B05 Constitutive equations
- B10 Isotropic functionals
- B15 Rotational groups [See also 22Exx.]
- B20 Simple materials
- B25 Multipolar stress theory
- B30 Thermodynamics of solids [For gases and fluids, see 80—XX.]
- B99 None of the above, but in this section

73Cxx Linear elasticity [For the biharmonic equation, see 31E30; for acoustics, see 76Q05.]

- C05 Stress functions
- C10 Saint-Venant's principle
- C15 Uniqueness theorems
- C20 Strain energy methods
- C25 Thermal stress problems
- C30 Anisotropic bodies
- C35 Mixed boundary value problems [See also 45P05.]
- C99 None of the above, but in this section

73Dxx Wave propagation in solids

- D05 Impact and explosion problems [See also 76L05.]
- D10 Integral transforms
- D15 Dilatational and shear waves
- D20 Surface waves

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- D25 Wave diffraction and dispersion
- D99 None of the above, but in this section
- 73Exx Plasticity**
 - E05 Yield criteria and flow rules
 - E10 Method of successive approximations
 - E15 Slip-line theory
 - E20 Limit analysis
 - E25 Creep
 - E99 None of the above, but in this section
- 73Fxx Viscoelasticity**
 - F05 Creep and relaxation functions
 - F10 Correspondence principle
 - F15 Time dependent boundary value problems
 - F20 Aging of materials
 - F25 Environmental-dependent materials
 - F99 None of the above, but in this section
- 73Gxx Finite deformations**
 - G05 Finite elasticity
 - G10 Strain energy functions
 - G15 Finite viscoelasticity
 - G20 Metal forming problems
 - G99 None of the above, but in this section
- 73Hxx Elastic stability**
 - H05 Buckling
 - H10 Dynamic stability
 - H99 None of the above, but in this section
- 73Jxx Aeroelasticity**
 - J05 Interaction of aerodynamics and elasticity
 - J10 Vibrations, flutter
 - J15 Divergence
 - J99 None of the above, but in this section
- 73Kxx Structural mechanics**
 - K05 Beams, columns
 - K10 Plates
 - K15 Membranes, shells
 - K20 Composite structures
 - K25 Finite element methods
 - K99 None of the above, but in this section
- 73Lxx Theory of shells**
 - L05 Non-euclidean geometry, tensorial methods [See also 53A45.]
 - L10 Anisotropic shells
 - L15 Shell dynamics
 - L99 None of the above, but in this section
- 73Mxx Fractural mechanics**
 - M05 Brittle fracture, cracks
 - M10 Fatigue
 - M15 Ductile fracture
 - M20 Material instability
 - M99 None of the above, but in this section
- 73Nxx Geophysical solid mechanics** [See also 86—XX.]
 - N05 Global dynamics
 - N10 Earthquake problems
 - N99 None of the above, but in this section
- 73Pxx Biomechanics of solids**
 - P05 Mathematical models of biological materials
 - P10 Mechanics response
 - P99 None of the above, but in this section
- 73Q05 Soil mechanics**
- 73R05 Electromagnetic elasticity**
- 73Sxx Micromechanics of solids**
 - S05 Dislocation theory
 - S99 Other micromechanics

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- 76—XX FLUID MECHANICS** [For general continuum mechanics, see 73Bxx.]
 - 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 - 01 Elementary exposition (collegiate level)
 - 02 Advanced exposition (research surveys, etc.)
 - 03 Historical
 - 04 Explicit machine computation and programs (not the theory of computation or programming)
- 76Axx Constitutive equations** [See also 35L65.]
 - A05 Non-Newtonian fluids
 - A10 Viscoelastic fluids
 - A99 None of the above, but in this section
- 76Bxx Incompressible, inviscid fluids, potential theory**
 - B05 Airfoil theory
 - B10 Jets and cavities, free-streamline theory, water-entry problems, hydrofoil theory
 - B15 Water waves, gravity waves; dispersion and diffraction, nonlinear interaction
 - B20 Ship waves
 - B25 Solitary and cnoidal waves
 - B99 None of the above, but in this section
- 76Cxx Incompressible inviscid fluids, vorticity flows**
 - C05 Vorticity flows
 - C10 Internal waves
 - C15 Atmospheric waves
 - C20 Rossby waves
 - C99 None of the above, but in this section
- 76Dxx Incompressible viscous fluids**
 - D05 Navier-Stokes equations [See also 35Q10.]
 - D10 Boundary-layer theory
 - D15 Boundary-layer separation and re-attachment
 - D20 Higher-order effects in boundary layers
 - D25 Wakes and jets
 - D30 Singular perturbation problems
 - D99 None of the above, but in this section
- 76Exx Hydrodynamic stability**
 - E05 Stability of parallel flows
 - E10 Inertial instability
 - E15 Convective instability
 - E20 Instability of geophysical and astrophysical flows
 - E25 Magnetohydrodynamic and electrohydrodynamic instabilities
 - E30 Nonlinear effects
 - E99 None of the above, but in this section
- 76F05 Turbulence** [See also 60Gxx, 60Jxx.]
- 76Gxx Subsonic flows**
 - G05 Hodograph methods
 - G10 Kármán-Tsien approximation
 - G15 Iterative methods
 - G20 Free-streamline theory
 - G99 None of the above, but in this section
- 76H05 Transonic flows, limit lines**
- 76Jxx Supersonic flows**
 - J05 Hodograph methods
 - J10 Method of characteristics
 - J99 None of the above, but in this section
- 76K05 Hypersonic flows**
- 76L05 Shock waves and blast waves** [See also 73D05.]
- 76M05 Nonhomotropic flows of compressible fluids**

78—X

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AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 76N05 Boundary-layer theory of compressible fluids
- 76P05 Rarefied gas flows, Boltzmann equation [See also 82A05.]
- 76Q05 Hydrodynamic sound, acoustics
- 76Rxx Diffusion and convection [See also 60J60.]
 - R05 Forced convection
 - R10 Free convection
 - R99 None of the above, but in this section
- 76S05 Flows in porous media
- 76T05 Two-phase and multiphase flows
- 76U05 Rotating fluids
- 76V05 Stratified fluids
- 76W05 Magnetohydrodynamics and electrohydrodynamics
- 76X05 Ionized gas flow in electromagnetic fields
- 76Y05 Quantum hydrodynamics and relativistic hydrodynamics [See also 83C55, 85A30.]
- 76Zxx Biological fluid mechanics
 - Z05 Physiological flows
 - Z10 Biopropulsion in water and in air
 - Z99 None of the above, but in this section

78—XX OPTICS, ELECTROMAGNETIC THEORY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Geometric optics
- A10 Physical optics
- A15 Electron optics
- A20 Space charge waves
- A25 Electromagnetic theory
- A30 Electro- and magnetostatics
- A35 Motion of charged particles
- A40 Waves and radiation
- A45 Diffraction, scattering [For WKB methods, see also 34E20.]
- A50 Antennas, wave-guides
- A55 Technical applications
- A57 Mathematically heuristic optics and electromagnetic theory (must also be assigned at least one other classification number in this section)

80—XX CLASSICAL THERMODYNAMICS, HEAT TRANSFER

- [For thermodynamics of solids, see 73B30.]
- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Foundations
- A10 Classical thermodynamics
- A15 Thermodynamics of mixtures
- A20 Heat and mass transfer

- A25 Combustion, interior ballistics
- A30 Chemical kinetics
- A35 Mathematically heuristic classical thermodynamics (must also be assigned at least one other classification number in this section)

81—XX QUANTUM MECHANICS

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A06 Relativistic theory
- A09 Selfadjoint operator theory in quantum mechanics, essential selfadjointness of the Hamiltonian
- A10 Perturbation theory
- A12 Logical foundations of quantum mechanics
- A15 Feynman integrals and graphs, applications of algebraic topology and algebraic geometry to these problems
- A17 Axiomatic quantum field theory; operator algebras
- A18 Constructive quantum field theory; models of quantum fields
- A19 Renormalization theory
- A20 Commutation relations
- A24 Bethe-Salpeter equation
- A27 Current algebra
- A30 Broken symmetries
- A33 Covariant wave equations
- A36 Strong interaction
- A39 Electromagnetic interaction
- A42 Weak interaction
- A45 Potential scattering theory [For WKB methods, see also 34E20.]
- A48 S-matrix theory and other scattering theory
- A51 Dispersion theory
- A54 Applications of group theory to elementary particles
- A57 Other elementary particle theory
- A60 Applications of group theory to nuclear physics
- A63 Other nuclear physics
- A66 Applications of group theory to atomic physics
- A69 Other atomic physics
- A72 Applications of group theory to molecular physics
- A75 Other molecular physics
- A78 General group representation motivated by physics but not covered by 81A54, 81A60, 81A66, 81A72, representations of concrete classical groups such as $SL(n, C)$, $U(p, q)$, etc.
- A81 Quantum mechanics of many-body systems
- A84 Superconductivity and superfluidity

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

A87 Mathematically heuristic quantum mechanics (must also be assigned at least one other classification number in this section)

82—XX STATISTICAL PHYSICS, STRUCTURE OF MATTER

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Mathematical general statistical mechanics
- A15 Mathematical quantum statistical mechanics
- A25 Phase transitions
- A30 Statistical thermodynamics [See also 80—XX.]
- A35 Irreversible thermodynamics
- A40 Kinetic theory of gases
- A45 Plasma
- A50 Liquids
- A55 Solids
- A60 Crystals
- A65 Metals
- A70 Transport processes [See also 85A25.]
- A75 Nuclear reactor theory
- A77 Mathematically heuristic statistical physics (must also be assigned at least one other classification number in this section)

83—XX RELATIVITY

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

83A05 Special relativity

83B05 Observational and experimental questions

83Cxx General relativity

- C05 Einstein's equations
- C10 Equations of motion
- C15 Closed form solutions
- C20 Classes of solutions
- C25 Approximation procedures, weak fields
- C30 Asymptotic procedures (radiation, news functions, etc.)
- C35 Gravitational waves
- C40 Groups of motions, invariance groups, observation laws, etc.
- C45 Quantization of the gravitational field
- C50 Electromagnetic fields
- C55 Hydrodynamics [See also 76Y05.]
- C99 None of the above, but in this section

83D05 Relativistic gravitational theories other than Einstein's

83Exx Unified field theories

E05 Geometrodynamics

E10 Asymmetric field theories

E15 Five- and higher-dimensional theories

E99 None of the above, but in this section

83F05 Cosmology

85—XX ASTRONOMY AND ASTROPHYSICS [For celestial mechanics, see 70F15.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Galactic and stellar dynamics
- A10 Astronautics
- A15 Stellar structure
- A20 Stellar atmospheres
- A25 Radiative transfer
- A30 Hydrodynamic and hydromagnetic problems [See also 76Y05.]
- A35 Statistical astronomy
- A40 Cosmology [For relativistic cosmology, see 83F05.]
- A45 Radio astronomy

86—XX GEOPHYSICS [See also 73Nxx, 76U05, 76V05.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)
- A05 Hydrology, hydrography, oceanography
- A10 Meteorology
- A15 Seismology
- A20 Potentials, prospecting
- A25 Geo-electricity and geomagnetism
- A30 Geodesy, mapping problems
- A35 Atmospheric physics

90—XX ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
- 01 Elementary exposition (collegiate level)
- 02 Advanced exposition (research surveys, etc.)
- 03 Historical
- 04 Explicit machine computation and programs (not the theory of computation or programming)

AMS (MOS) SUBJECT CLASSIFICATION SCHEME (1970)

- 90Axx Mathematical economics** [For econometrics, see 62P20.]
 A05 Decision theory [See also 62Cxx.]
 A10 Utility theory
 A15 Economic models
 A20 Economic time series analysis [See also 62M10.]
 A99 None of the above, but in this section
- 90Bxx Operations research and management science**
 B05 Logistics, inventory, storage
 B10 Flows in networks, deterministic
 B15 Flows in networks, probabilistic
 B20 Highway traffic
 B25 Reliability and maintenance [See also 60K20, 62N05.]
 B30 Production theory
 B35 Scheduling theory
 B40 Search theory
 B99 None of the above, but in this section
- 90Cxx Mathematical programming** [For dynamic programming, see 49Cxx; for papers emphasizing calculus of variations or involving abstract spaces, see 49Dxx.]
 C05 Linear programming
 C10 Integer programming
 C15 Stochastic programming
 C20 Quadratic programming
 C25 Convex programming
 C30 Nonlinear programming
 C35 Network programming, programming in networks
 C40 Markov programming
 C45 Markov renewal programming
 C50 Applications of mathematical programming
 C99 None of the above, but in this section
- 90Dxx Game theory**
 D05 2-person zero-sum games
 D10 *n*-person games, noncooperative
 D12 *n*-person games, cooperative, solution concepts
 D13 Games for a continuum of players
 D15 Multistage games, stochastic [See also 93E05.]
 D20 Multistage games, recursive
 D25 Differential games
 D30 Utility theory [See also 90A10.]
 D35 Decision theory [See also 62Cxx, 90A05.]
 D40 Game theory models [See also 65Cxx, 68A55.]
 D45 Applications of game theory
 D99 None of the above, but in this section

92—XX BIOLOGY AND BEHAVIORAL SCIENCES

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)
 A05 Biology [See also 73Pxx, 76Zxx.]
 A10 Genetics

- A15 Population dynamics, epidemiology
 A20 Sociology
 A25 Psychology

93—XX SYSTEMS, CONTROL [For optimal control (nonstochastic), see 49—XX.]

- 00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
 —01 Elementary exposition (collegiate level)
 —02 Advanced exposition (research surveys, etc.)
 —03 Historical
 —04 Explicit machine computation and programs (not the theory of computation or programming)

93Axx General

- A05 Axiomatic system theory
 A10 General systems
 A15 Large scale systems (approximation techniques)
 A99 None of the above, but in this section
- 93Bxx Controllability, observability, and system structure**
 B05 Controllability, observability, definitions and criteria
 B10 Canonical structure
 B15 Realizability of systems from input-output data
 B20 Minimal systems representations
 B25 Algebraic theory of time-invariant systems
 B30 System identification
 B35 Sensitivity
 B99 None of the above, but in this section

93Cxx Control systems, guided systems

- C05 Linear
 C10 Nonlinear
 C15 Systems governed by ordinary differential equations
 C20 Systems governed by partial differential equations
 C22 Systems governed by integral equations
 C25 Systems in abstract spaces
 C30 Systems governed by functional relations other than differential or integral equations
 C40 Adaptive
 C45 Time-invariant
 C50 Time-dependent
 C55 Discrete-time
 C60 Continuous-time
 C99 None of the above, but in this section

93Dxx Stability

- D05 Ljapunov stability
 D10 Popov-type stability of feedback systems
 D15 Stabilization of systems by feedback
 D99 None of the above, but in this section

93Exx Stochastic systems and control

- E05 Stochastic games, stochastic differential games
 E10 Estimation problems (filtering, prediction, data smoothing, system identification)
 E15 Stochastic stability
 E20 Optimal stochastic control (continuous parameter)

- E25 Computational methods
E99 None of the above, but in this section

- 94—XX INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA** [For papers in pattern recognition, linguistics and formal languages, see 68A30, 68A45.]
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—01 Elementary exposition (collegiate level)
—02 Advanced exposition (research surveys, etc.)
—03 Historical
—04 Explicit machine computation and programs (not the theory of computation or programming)
A05 Communication theory [See also 60J30.]
A10 Coding theory
A15 Information theory [See also 62B10.]
A20 Circuits, networks; applications of graph theory and Boolean algebra
A25 Sequential machines
A30 Automata, general [See also 02F10, 18B20, 68A25.]
A35 Probabilistic automata

- 96—XX MATHEMATICAL EDUCATION, ELEMENTARY**
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—03 Historical
96Axx Curriculum development
A05 Arithmetic
A10 Algebra
A15 Geometry
A99 None of the above, but in this section
96Bxx Instructional techniques
B05 Individual differences
B10 Discovery method
B15 Laboratory method
B20 Computer assisted instruction
B25 Programmed materials
B30 Manipulative materials (Cuisenaire rods, etc.)
B99 None of the above, but in this section
96C05 Testing
96D05 Enrichment
96E05 Superior students
96F05 Slow learners
96G05 Psychological studies
96H05 Teacher training

- 97—XX MATHEMATICAL EDUCATION, SECONDARY**
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)

- 03 Historical
97Axx Curriculum development
A05 Arithmetic
A10 Algebra
A15 Geometry
A20 Calculus and analysis
A25 Probability and statistics
A30 Computer mathematics and numerical analysis
A35 Applied mathematics
A99 None of the above, but in this section
97Bxx Instructional techniques
B05 Individual differences
B10 Discovery method
B15 Laboratory method
B20 Computer assisted instruction
B25 Programmed materials
B30 Media and learning aids
B99 None of the above, but in this section
97C05 Testing
97D05 Enrichment
97E05 Superior students
97F05 Slow learners
97G05 Psychological studies
97H05 Teacher training

- 98—XX MATHEMATICAL EDUCATION, COLLEGIATE**
(including two-year college)
—00 Difficult to classify at the second level (must also be assigned at least one other classification number in this section)
—03 Historical
98Axx Curriculum development
A05 Arithmetic
A10 Algebra
A15 Geometry
A20 Calculus and analysis
A25 Probability and statistics
A30 Computer mathematics and numerical analysis
A35 Applied mathematics
A99 None of the above, but in this section
98Bxx Instructional techniques
B05 Individual differences
B10 Discovery method
B15 Laboratory method
B20 Computer assisted instruction
B25 Programmed materials
B30 Media and learning aids
B99 None of the above, but in this section
98C05 Testing
98D05 Enrichment
98E05 Superior students
98F05 Slow learners
98G05 Psychological studies
98H05 Teacher training

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